The University Of Sheffield.

The Effects of 2004 Tsunami and the Transformative Adaptation of Disaster Management in Malaysia

By:

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Dedication

This dissertation is a precious gift to my mother, who always prays for my success and my late father who understood my dream.

I dedicate this dissertation to my wife, Anizah who follows my ambition at the expense of her career, for her moral support and understanding. It also goes to our daughters; Nuraina, Nuralisa, Nuradelia and Nursara for their perseverance, determination and adaptation in a new environment.

My dedication also extended to the Malaysian community in Sheffield especially close friends in Darnall for their endless support. It is also extended to my families and friends in Pahang, Penang, Melaka, Putrajaya, and throughout Malaysia.

'Kejarlah cita-citamu sehingga ke hujung dunia'
-Andrea Hirata, Laskar Pelangi-

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List of Abbreviations

AADMER : ASEAN Agreement on Disaster Management and Emergency Response

ABIM : 'Angkatan Belia Islam Malaysia' or Muslim Youth Movement of Malaysia

ACAB : Anti-Corruption Advisory Board

ACORD : Agency for Cooperation in Research and Development

ADPC : Asian Disaster Preparedness Centre

AKP : Justice and Development Party of Turkey

BA : 'Barisan Alternatif' or Alternative Front

BBC : British Broadcasting Corporation

BERSIH : 'Gabungan Pilihanraya Bersih dan Adil' or The Coalition for Clean and Fair Elections

BN : 'Barisan Nasional' or National Front

CBDM : Community Based Disaster Management

CBDRR : Community Based Disaster Risk Reduction

CBRN : Chemical, Biological, Radioactive and Nuclear

CC : Complaints Committee

CCAPS : Climate Change and African Political Stability

CCPP : Consultation and Corruption Prevention Panel

CE : Complex Emergency

CFC : Chlorofluorocarbon

COPE : Consortium for Political Emergencies

CPE : Complex Political Emergency

CPM : Communist Party of Malaya

DAP : Democratic Action Party

DID : Drainage and Irrigation Department

DPJ : Democratic Party of Japan

DOCC : Disaster Operating Control Centre

DPM : Deputy Prime Minister

EAIC : Enforcement Agency Integrity Commission

EPU : Economic Planning Unit

FEMA : Federal Emergency Management Authority

GERAKAN	: 'Parti Gerakan Rakyat Malaysia' or Malaysian People's Movement Party
HFA	: Hyogo Framework for Action
HINDRAF	: Hindu Rights Action Force
IDS	: Institute of Development Studies at the University of Leeds
IPCMC	: Independent Police Complaints and Misconduct Commission
KEADILAN	: 'Parti Keadilan Nasional' or National Justice Party
KWABBN	: 'Kumpulan Wang Amanah Bantuan Bencana Negara' or National Disaster Relief Trust Fund
LDP	: Liberal Democratic Party of Japan
LKIM	: 'Lembaga Kemajuan Ikan Malaysia' or Fisheries Development Authority of Malaysia
LTTE	: Liberation Tigers of Tamil Eelam
MACC	: Malaysia Anti-Corruption Commission
MAGERAN	: 'Majlis Gerakan Negara' or National Operation Council of Malaysia
MCA	: Malaysian Chinese Association
MIC	: Malaysian Indian Congress
MMD	: Malaysia Meteorology Department
MNTEWS	: Malaysian National Tsunami Early Warning System
MP	: Member of Parliament
MPAJA	: Malayan People's Anti-Japanese Army
NEP	: New Economic Policy
NGO's	: Non-Government Organisations
NSC	: National Security Council of Malaysia
OCPD	: Officer in Charge of Police District
ORP	: Operation Review Panel
OSCP	: On Scene Command Post
PAS	: 'Parti Islam Se-Malaysia' or Pan-Malaysian Islamic Party
PBS	: 'Parti Bersatu Sabah' or Sabah United Party
PERKASA	: 'Persatuan Pribumi Perkasa' or Mighty Native Organisation
PKR	: 'Parti Keadilan Rakyat' or People's Justice Party
PM	: Prime Minister
PR	: 'Pakatan Rakyat' or People's Alliance

PSM	: 'Parti Sosialis Malaysia' or Malaysian Socialist Party
P-TOMS	: Post Tsunami Operational Management Structure
SCC	: Special Committee on Corruption
SJKC	: 'Sekolah Jenis Kebangsaan Cina' or National Type Chinese School
SJKT	: 'Sekolah Jenis Kebangsaan Tamil' or National Type Indian School
SMS	: Short Messaging System
SOP's	: Standard Operating Procedures
SPNB	: 'Syarikat Perumahan Negara Berhad' or National Housing Company Limited
TCPD	: Town and Country Planning Department
UMNO	: United Malays National Organization
UNESCO	: The United Nations Educational, Scientific and Cultural Organization
UNISDR	: The United Nations Office for Disaster Risk Reduction
UNOCHA	: The United Nations Office for the Coordination of Humanitarian Affairs
WCDR	: World Conference on Disaster Reduction
WHO	: World Health Organisation

Abstract

The research examines the transformative effects of the 2004 Indian Ocean Tsunami on the Malaysian government's disaster management structure and mechanism and on affected local communities in Penang Island. Was 2004 tsunami the catalyst for transformative adaptation in disaster management mechanism? The thesis explores how the government responded to the tsunami by evaluating the strengths and weaknesses of the response. It also provides a review of how this experience affected the government's disaster response services that led to drastic change to the existing disaster management mechanism. The thesis also focuses on the transformative effect of the tsunami on a specific government agency, in this case, the National Security Council (NSC) as the main coordinating agency for disaster management in Malaysia to accommodate the feedback and reaction of affected local communities, as well as better prepared for emergencies and disasters in the future. The thesis also discusses on the technical reforms and transformative adaptation introduced in the aftermath of the tsunami and changes to standard operating procedures, emergency drills, early warning systems, and amendment of National Security Council (NSC) Directive No. 20. The thesis explains and discuss the reaction of affected local communities to the government's response and recovery programmes, and speculates on the possible indirect effects on politics in these communities, as illustrated by election results and based on my observation as the Penang State Security Secretary responsible for coordinating disaster response. This research uses the case study approach and applies mixed research methods, both quantitative and qualitative, and the case study areas are from Tanjung Bungah, Batu Feringhi, Teluk Bahang and Kuala Sungai Pinang. The transformative adaptation took place in policy (in the amendment of NSC Directive No. 20 and the formulation of new SOP's for tsunamis), structure (setting up a new National Disaster Management Agency-NADMA), laws (Disaster Management Bill), rules and regulations (embedding disaster risk reduction in the development planning) and technical (establishing a new Malaysia Tsunami Early Warning System). The tsunami also has indirect political effects in the case study areas.

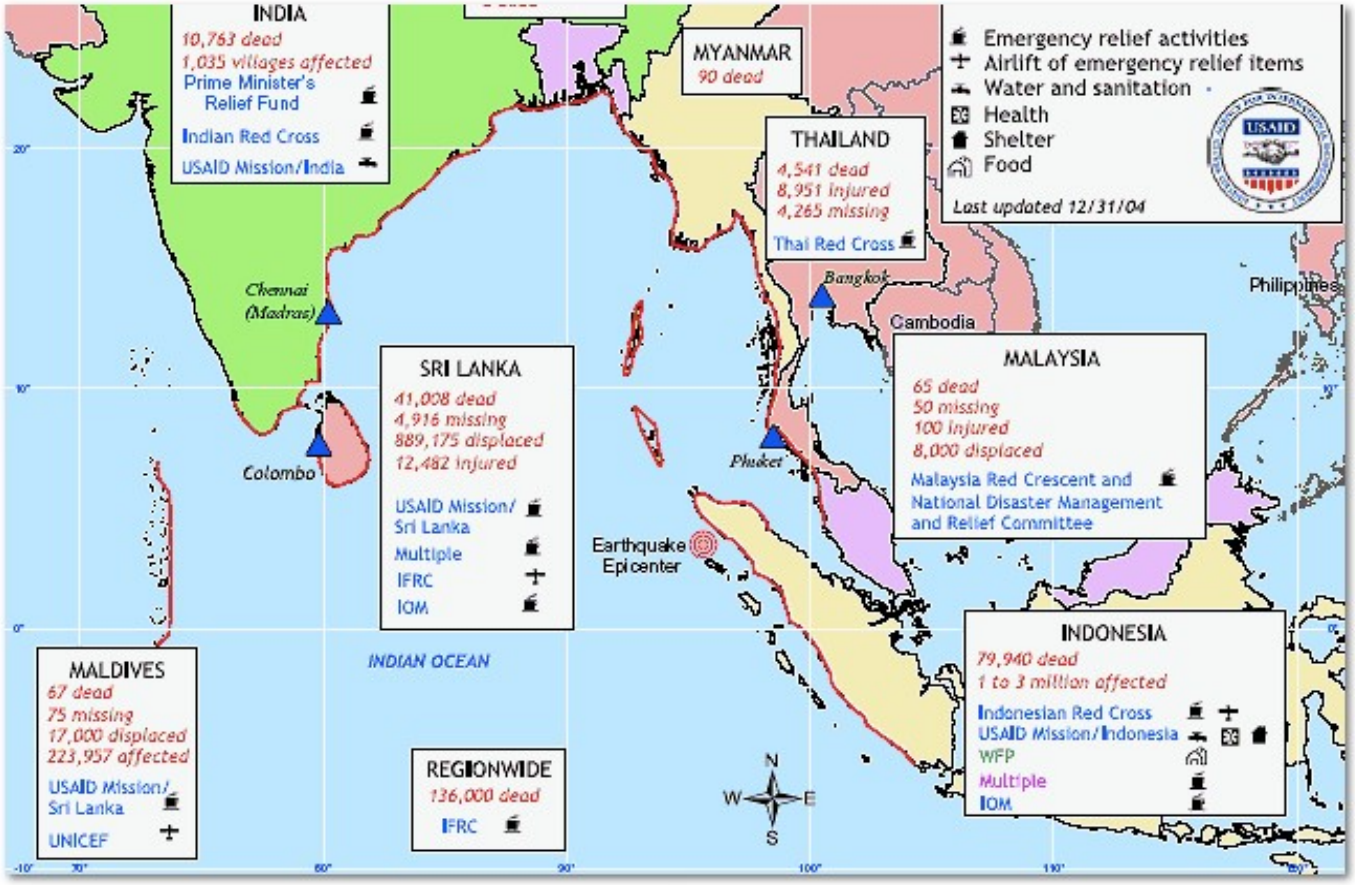
Chapter 1: Introduction

Problem

In recent years there has been an increase in academic interest in the social and political impact of major disasters and the consequences for resilience of how governments respond, or fail to respond, to these disasters (Arceneaux & Stein, 2006; Pelling & Dill, 2009; Sobel & Leeson, 2006; Tarcey, 2004). There is a widespread assumption in the literature that natural disasters can, if poorly responded to by authorities, result in major, even transformative effects to the affected governments (Redlener, 2012; Revi et al., 2014; Tarcey, 2004; Zelizer, 2011). Natural disasters have the potential to trigger changes in disaster management policy and mechanisms of a stricken country due to the perceived incompetence of the government in managing the aftermath. Among the most notable recent natural disasters were the Indian Ocean Tsunami (2004), the earthquake in Port au Prince, Haiti (2010), the earthquake and tsunami in Sendai, Japan (2011), the Christchurch earthquake, New Zealand (2011), and Typhoon Haiyan in The Philippines (2013). During the last ten years, natural disasters have claimed more than 3.4 million lives, with a billion more effected directly or indirectly, and a huge resources have been devoted to rebuilding and reconstructing lives (Hogan & Burstein, 2007). Large scale and unpredicted natural disasters often overstretch the capabilities and resources of affected countries.

The Indian Ocean Tsunami of 2004 (magnitude 9.1) was amongst the most devastating disasters at the beginning of 21st century. It caused a great loss of lives across the region, with about 227,898 people killed or missing, leaving massive physical damage and disrupted socio-economic activities. In terms of scale, the earthquakes were felt widely across the Indian Ocean from Indonesia to Maldives (Figure 1.1). The most affected areas being in Indonesia (Banda Aceh and Meulaboh) and parts of Bangladesh, India, Malaysia, the Maldives, Myanmar, Singapore, Sri Lanka and Thailand (USGS, 2010). The worst hit area was Banda Aceh that was totally wiped out by tsunami wave (Figure 1.2), which demonstrated the extent of the tsunami impact and consequences that accounted for the loss of life of 128,645

Figure 1.1: 2004 Indian Ocean Tsunami-Affected Countries



Source: Finney (2005) adapted from US Agency for International Development (USAID).

Figure 1.2: The Devastated Impact of 2004 Tsunami in Banda Aceh

Banda Aceh, Indonesia – Before

Banda Aceh, Indonesia - After

Source: Finney (2005)

people, 37,063 missing, and displaced 532,898 of Banda Aceh population (Rofi, Doocy, & Robinson, 2006).

The tsunami created a humanitarian crisis, and national and international aid agencies found it difficult to reach the affected communities in countries due to various factors. For example, a weak central government, insecurity because of an active insurgency as in Jaffna, Sri Lanka, and infrastructure collapse such as in Aceh, Indonesia. The interplay between natural disasters and their impact on the government's disaster management structures and mechanisms, however, are not well studied. Is a natural disaster a catalyst for transformative change in government's policy, structures and mechanisms? Transformative adaptation can be distinguished from 'traditional' and 'transitional' adaptation. According to Q.E.D Foundation[1] (2014);

> "Traditional adaptation is where change is about making improvements to current practices, thus effectively maintaining the status quo. Transitional adaptation, where change aims to change current practices to improve outcomes, with tangential impact on the status quo. Transformational adaptation, where change aims to change not only practices, but outcomes, thereby disrupting the status quo" (Q.E.D Foundation, 2014, para 2).

Dow et al. (2013) argue that discussion of transformation in the literature is focus on the role of adaptation that accelerate drastic change (rather than gradual process) to the current practices. Pelling (2010) and Revi et al. (2014) suggest transformation adaptation is either voluntary (such as resettlement of vulnerable populations in flood prone areas) or forced by unexpected events (Revi et al., 2014). I argue that government is the only body responsible for deciding upon and implementing changed policies.

The 2004 tsunami was an unprecedented event that challenged the government's response and recovery mechanism and policy; the government's response relied on its disaster management agencies to

[1] Q.E.D. Foundation is a non-profit organisation (NGO's) established in the USA that focus on conducting research, training and promoting best practices on transformative change and adaptation.

respond effectively and efficiently but these mechanisms were not designed for a tsunami or disaster on this scale. The affected local communities naturally expected government to deliver an effective response to the tsunami and, conversely, to take responsibility and be accountable for an ineffective response. Failure meant the government risked public anger, frustration and dissatisfaction. Therefore, this thesis explores and examines the government's response to the tsunami, the affected population's feedback and the reaction that led to the transformative adaptation of the government's disaster management mechanism in order to address government weaknesses, accommodate affected people's expectation and avert discontent.

Significance

Previous studies have examined the impact of natural disasters on land use (Colbourne, 2005), the environment (Horton et al., 2008), and politics (Blocker, Rochford, & Sherkat, 1991) (Pelling & Dill, 2009). These studies concentrate on the recovery and rehabilitation phases of disaster management, although the response phase is equally important and crucial in determining the effectiveness of government agencies. This research repeats this approach by exploring the transformative effects of 2004 Indian Ocean Tsunami on the Malaysian government's disaster response mechanism.

This research will offer a better understanding of a local community's expectations and reactions in the aftermath of a disaster, in this case, the 2004 tsunami. These expectations are part of government intervention programmes, such as Community Based Disaster Risk Reduction (CBDRR) in the response and recovery phases of the disaster management cycle. Further, the research will contribute to the streamlining of disaster management policy and standard operating procedures (SOP's) by taking into consideration the strengths and weaknesses of such changes. The research indicates governments should focus on *strengthening resilience* by enhancing social cohesion and political stability by identifying and neutralising factors associated with natural disasters that might trigger social and political unrest. This requires the close involvement of potentially affected communities in the development and implementation of CBDRR programmes and establishing

transformative adaptation policies and strategies. This also requires an effective and legitimate state.

Hypothesis

The 2004 Indian Ocean Tsunami can be considered the catalyst that triggered transformative adaptation in the government's disaster management structure and mechanisms. In order to test the hypothesis, the following research objectives and questions are put forward:

Research Objectives and Questions

There are three objectives. The *first* objective is to explore the tsunami as an unprecedented event that placed stress on the effectiveness of government responses and recovery. The corresponding question is how did the government respond to the 2004 tsunami?

The *second* objective is to examine affected population's feedback and reaction towards government's response and recovery programmes in the case study areas. Is there any evidence of a high level of population frustration and dissatisfaction towards the three main programmes:-

a) Distribution of 'Wang Ehsan' (Emergency Monetary Aid);

b) Allocation of 'Rumah Tsunami' (Tsunami Housing Scheme); and,

c) Distribution of fisheries assistance.

The *third* objective is to examine the tsunami as the trigger for the transformation of disaster management structure and mechanism in Malaysia. Is there any evidence that the 2004 tsunami triggered a transformative adaptation to the disaster management mechanism?

Table 1.1 shows the relationship between research objectives, research questions, data and evidence to answer the questions and sources of data and information. The next section discusses the methods used for this research.

Table 1.1: Matrix of Research Objectives, Research Questions, Data/Evidence and its Source

Research Objective	Research Question	Data/Evidence	Source
First Objective: To explore the tsunami as an unprecedented event that place stress on the government's disaster management machineries.	**First Question:** How did the government respond to the 2004 tsunami?	Feedback from affected local population.	Fieldwork
Second Objective: To examine affected population's feedback and reaction towards government's response and recovery programmes in the case study areas.	**Second Question:** Is there any evidence of a high level of population frustration and dissatisfaction towards the three main programmes:- a) Distribution of 'Wang Ehsan' (Emergency Monetary Aid); b) Allocation of 'Rumah Tsunami' (Tsunami Housing Scheme); and, c) Distribution of fisheries assistance.	Effectiveness of government mechanism and policy. Level of dissatisfaction and issues regarding tsunami response and recovery programmes.	a) Tsunami post mortem report by National Security Council b) Interview with politicians/ incumbents of 2004 in tsunami affected constituencies.

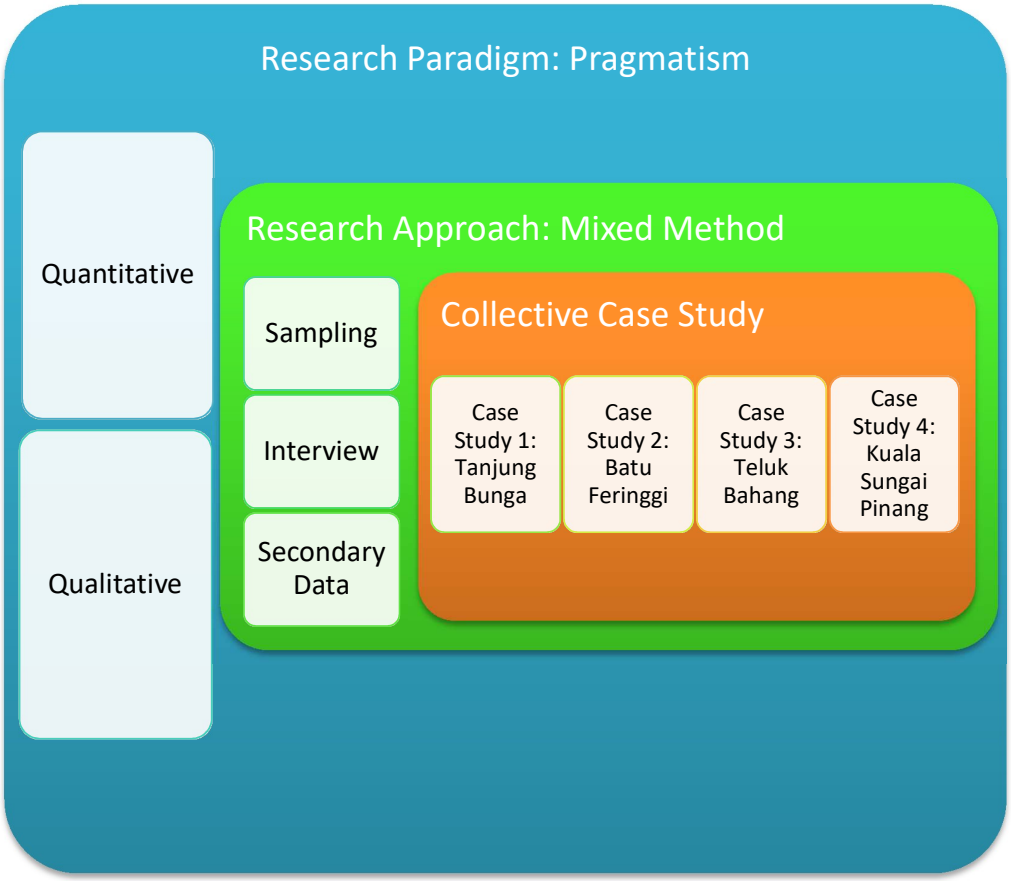
Table 1.1 (cont.): Matrix of Research Objectives, Research Questions, Data/Evidence and its Source.

Research Objective	Research Question	Data/Evidence	Source
Third Objective: To examine the tsunami as the trigger for the transformation of disaster management structure and mechanism in Malaysia.	**Third Question:** Is there any evidence that the 2004 tsunami triggered a transformative adaptation to the disaster management mechanism?	Comparing the structure and mechanism before and after the 2004 tsunami.	National Security Council

Research Methodology

This section discusses briefly research paradigms, research methods, data collection, and the conceptual framework. This research applies the mixed methods approach of a pragmatic research paradigm, gathering both quantitative (using a questionnaire to produce descriptive statistical data) and qualitative data (interviews for further information and explanation) as shown in Figure 1.3.

Figure 1.3: Research Design



The research applies Mixed Methods Sequential Procedures as described by, for example, Creswell et.al (2006), Creswell (2013), Ivankova et.al (2006), and Leech and Onwuegbuzie (2009). In the pragmatic paradigm, each research objective may have a different research method depending on the most suitable approach needed to address the specific research question. Since the research questions involve both exploration (qualitative) and causal relationships (quantitative), pragmatism is most appropriate because pragmatism provides freedom to researcher to derive knowledge about the problem from multiple approaches in an effort to understand it better (Creswell, 2013). The quantitative element involved administering confidential questionnaires to elicit information on, for example, the popular reaction to the government's response and recovery programmes. The qualitative method focused on interviews in order to elicit explanations or detailed information of the disaster management officials and politicians' experiences during the 2004 tsunami. I use mix-method instead of a single method in order to compliment and overcome weaknesses in both methods.

The weaknesses or limitation of qualitative methods as argued by Creswell and Poth (2017), Bowen (2006) and Carr (1994) are time and resources consuming, overlook important information, researcher bias in interpretation and observation, and verification issues. In order to overcome these limitations, Sandelowski (1993), Long and Johnson (2000), Lincoln and Guba (1985) and Morse et al (2002) suggest that researchers take into account personal biasness and personal experience by using, personal self-reflexivity, systematic record keeping and research journals, validating the transcripts of respondents through cross checking and triangulating data from other sources such as official government documents and mass media reports. Weaknesses and limitation in quantitative methods as argued by Creswell (2013), Bryman (2006) and Carr (1994) are misrepresented population, requires time and resources because of large sample size and limited flexibility for respondents to provide detail answer due to close-ended questionnaire.

This research methodology is a case-study approach. A case study is used to analyse and describe extensively social phenomenon or system for themes, patterns and issues in its setting that is defined by place or time (Creswell,

2013; Meriam, 1998; Wolcott, 1995). According to Yin (2011) a case study is an appropriate method to explore research questions in their context and environment. Therefore, the case study approach has been chosen because my research is context specific and bounded by place (geographical location) and community (tsunami affected). The case study method enables the researcher to investigate phenomenon from multiple angles and employ different data sources, both qualitative and quantitative (Yin, 2011).

To pull various sources of information and methods together the research uses data triangulation. Data triangulation is a method of validating data by using multiple data collection techniques from different sources on the same case study such as interviews, questionnaires, observations, and secondary data (government reports etc.). The collected data is then cross checked to ensure rigour and validation. For the purpose of this research, participant behaviour during the administration of the questionnaires session was observed as part of the triangulation process and written up as 'critical incident reports' in an effort to cross check the data and promote self-reflexivity. Further, elite interviews with government officials (3 persons), politicians (3 persons) and NGO's leader (1 person) were conducted to validate the outcome of questionnaires. Interviewing different people on the same subjects, collecting and evaluating documents will reinforce the validity of the evidence and achieve triangulation. The purpose of conducting a sampling questionnaire in affected constituencies is to gain insights into the electorate's reaction to, and perception of, the government's response and recovery programmes, the issues and problems during and after the tsunami that lead to frustration and dissatisfaction towards government, and the degree to which anger influenced constituents' votes. The objective of interviewing politicians and officials from disaster management agencies is to obtain information from the other side in the interests of balance. Politicians interviewed were incumbents and candidates in the 2004 and 2008 General Elections (Appendix 1.1). An interview was also conducted with NGO's leader of PERKASA ('Pertubuhan Pribumi Perkasa'), an NGO's that focused on preserving Malays rights and privileges. The interviews are crucial for data regarding effectiveness of response mechanism and recovery programmes,

issues and the problems faced by government, identified shortfalls and weaknesses of disaster response mechanism, and, perceived factors that can be attributed to the frustration and dissatisfaction of the affected people.

To triangulate the information and data gathered from sampling and interview, secondary data from official reports of disaster management agencies such as post mortem report of the tsunami response, Community Based Disaster Risk Reduction (CBDRR) programmes, Tsunami Awareness Programmes, and Tsunami Drills in Penang (from the National Security Council-NSC and Malaysia Meteorology Department-MMD) were also used in the research . For example, information about the effectiveness of the awareness programme from the MMD report was cross checked and corroborated with the awareness level of affected communities. Information about issues and problems identified by politicians and constituents will be compared to the tsunami post mortem reports. The MMD report was important both as an indicator of official response not only to the 2004 tsunami but also to public disquiet and disaffection as manifested in the election results.

Data Collection

Mixed Methods Data Collection Procedures by Exploratory Sequential Design was used for this research. The method is a step by step process which begins with quantitative approach using questionnaires based on random sampling. In this case 50 participants were chosen randomly by stratified sampling (every odds number based on list of 100 people in the NSC Penang database of tsunami affected people) and based on availability during the fieldwork from four settlements located within two State Assembly constituencies of Tanjung Bungah and Teluk Bahang, which were the most severely affected by the tsunami on Penang Island, Malaysia (Figure 1.4). The list of respondents was retrieved from the database of National Security Council (NSC) Penang Office because NSC coordinates the development and relocation of tsunami housing scheme in Penang. Respondents were selected randomly: 12 of odds number from each of four blocks

apartment that total up to 48 and another two respondents were the Head of 'Rumah Tsunami' Community Association and his Assistant. The high percentage of female respondents was due to the time of sampling conducted (in the morning when most males were at work). The majority of respondents were Malays and then Indian because they were the majority of tsunami affected people in the NSC database. Most of the respondents were from the low income group because a majority of them were squatters, residing along the beaches during the tsunami.

The semi-structured interview method allows the researcher to have flexibility to adjust the way of asking questions according to interviewee behaviour and in line with ethical considerations. Thus, the interview data is complimentary to the questionnaire in a mixed methods approach of data collection. Moreover, interviews are useful for specific research qualitative and interpretive objectives and questions that cannot be answered through quantitative sampling. Data and information from multiple sources (primary and secondary) were cross checked for validation and triangulation purposes. Primary data also included interviews (with politicians, policy makers, and disaster management officials) and the questionnaire sampling that administered in tsunami affected communities. Secondary data from official reports, Parliamentary debates and official statistics were collected from relevant public and governmental agencies such as the National Security Council, the Election Commission, the Statistics Department and the Meteorological Department. Table 1.2 gives the type of data, materials and data sources used.

Authors such as Yin (2011), Creswell (2013), and Baxter and Jack (2008) have suggested defining boundaries on a case study in order to make it context specific and within a defined scope of study. Suggestions on how to define a case include: (a) by time and place; (b) by time and activity; and (c) by definition and context. I define the boundaries of this research as follows:

Table 1.2: Data Source and Collection Methods

Type of Data	**Materials**	**Source/Respondents**
Primary	Survey (Questionnaire) to get the satisfaction level of affected communities on government's response and recovery programmes. Any issue pertaining tsunami recovery such as tsunami resettlement programme, monetary aid. Is it bias to any political preference of affected people?	Local community in 4 tsunami affected coastal villages.
Primary	Interview	**Politician:** 1. Former Member of Parliaments and Penang State Assemblymen of Tsunami Affected areas in 2004. 2. Member of Parliaments and Penang State Assemblymen of 2008 General Election Term. **Policy Makers:** 1. Senior Officials of disaster management agencies.
Secondary	Hansard of Parliament and Penang State Assembly	Parliament and Penang State offices.
Secondary	Official reports on Tsunami Drills	Department of Meteorology
Primary	Post Mortem report of Community Based Disaster Risk Reduction Programme	National Security Council
Secondary	Statistics of Demonstration by political parties and community based NGO's in Penang	National Security Council
Primary	General Election results of 2004 and 2008	Election Commission
Secondary	Population Statistics	Department of Statistics
Secondary	Racial statement and sensitive issues manipulated by politicians in mass media (newspaper & blogs).	Printed newspaper, Online newspaper, Blogs

1. Geographic Areas: 4 Coastal settlements severely hit by the 2004 Indian Ocean Tsunami.

2. Social Group: Coastal Communities in four settlements.

3. Type of Evidence to be collected: experiences and perceptions regarding the 2004 tsunami in terms of reaction and feedback to the government's response and recovery programmes.

The rationale for selecting the four areas is straightforward: these areas were the most severely hit in terms of loss of life and property damage by the 2004 tsunami compared to other areas in Malaysia.

Reliability and Validity of Recall Data

My research partly uses recall or retrospective data, in particular data from interviews and close-ended questionnaire sampling of the case study areas. Limitations of recall data are interpretation and explanation of previous experience and phenomena are subjected to the memory of respondents that may lead to inaccuracy. Brenna et.al (1996) argue that it tend to "over-reporting, typically attributed to 'forward telescoping', where respondents report events that occurred outside of the time period under consideration, thereby inflating the results" (Brennan et.al., 1996, p. 1). Therefore, I impose triangulation methods in order to validate the interviews and sampling results as suggested by Brennan et.al. (1996) and Dex (1995). Dex argues:

> To establish whether recall data is valid or not, an independent record must be available. Interview responses on retrospective questions can then be compared with this record or some independent criteria. Independent records in studies of the validity of recall have come from Government administrative records, personnel, companies' and individuals' records (p. 61).

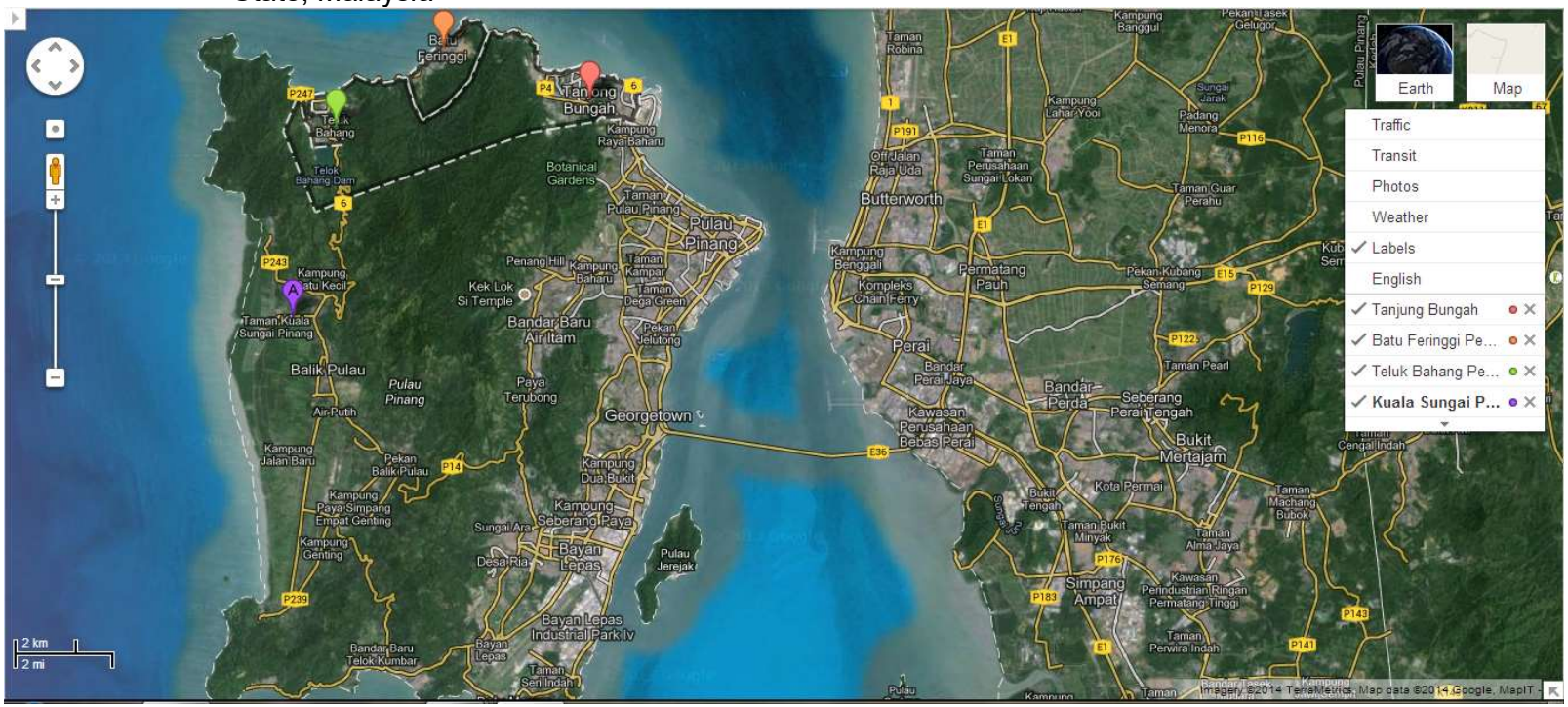
Brennan et.al (1996) and Dex (1995) also proposes to use landmark or phenomenal events, cues or clues and design a simple sequential questions in order to remind respondents about the particular event of interest. These techniques "reduce telescoping, that is, substantially reduced inaccurate reports of the activities" (Brennan et al., 1996, p. 3). For my research, I use

government official documents and put landmark event (the 2004 tsunami) to validate and cross-checked the outcome of interviews and samplings.

Figure 1.4 shows Tanjung Bungah and Batu Ferringhi located in the northeast of Penang Island and dominated by a squatters' settlement along the beach, which exposed them to the tsunami, in which make them the most vulnerable communities as evidenced in 2004 tsunami. Teluk Bahang and Kuala Sungai Pinang are located in the northwest of the island and are populated by fishermen and farmers with their houses located inland, which spared them from the tsunami in terms of loss of life but they suffered the loss of income due to damage to their boats and fishing equipment. The detail locations of the case study areas are shown in Figure 1.5 (Tanjung Bungah), Figure 1.6 (Batu Ferringhi), Figure 1.7 (Teluk Bahang) and Figure 1.8 (Kuala Sungai Pinang) respectively. The main economic activities of the villagers are fishing, farming, construction, and small scale trading. Geographically, the communities are located in the northeast and northwest of Penang Island, which is exposed to the threat of tsunami from the Andaman Sea and this vulnerability is critical. By the time of the fieldwork (12 July – 29 August 2014), all tsunami affected people in the four case study areas, whose houses were completely destroyed had been relocated to the new tsunami resettlement permanent housing area in Tanjung Bungah known as 'Rumah Tsunami'. These houses accommodated 100 families, of which half (50) were chosen as respondents by random sampling.

The 'Rumah Tsunami' is a housing complex with four blocks of apartment (three bedrooms, a kitchen and a living area), playground, a mosque and a multi-purpose hall. The demography of respondents was 24% male and 76% female; 78% Malays, 18% Indian and 4% Others (including Chinese); 8% (20-30 years), 10% (31-40 years), 22% (41-50 years), 36% (51-60 years) and 24% (61 years and above). In terms of education, 34% had completed primary school and 66% secondary school. With regards to occupation, 50% were not in paid employment (mostly housewives), 38% were employed in private companies; 10% in business, and 2% were government employees.

Figure 1.4: Case Study Areas: Tanjung Bungah, Batu Ferringhi, Teluk Bahang and Kuala Sungai Pinang of Penang State, Malaysia



Source: Digital Globe, 2013

Figure 1.5: Case Study 1: Tanjung Bungah

Source: Digital Globe, 2013

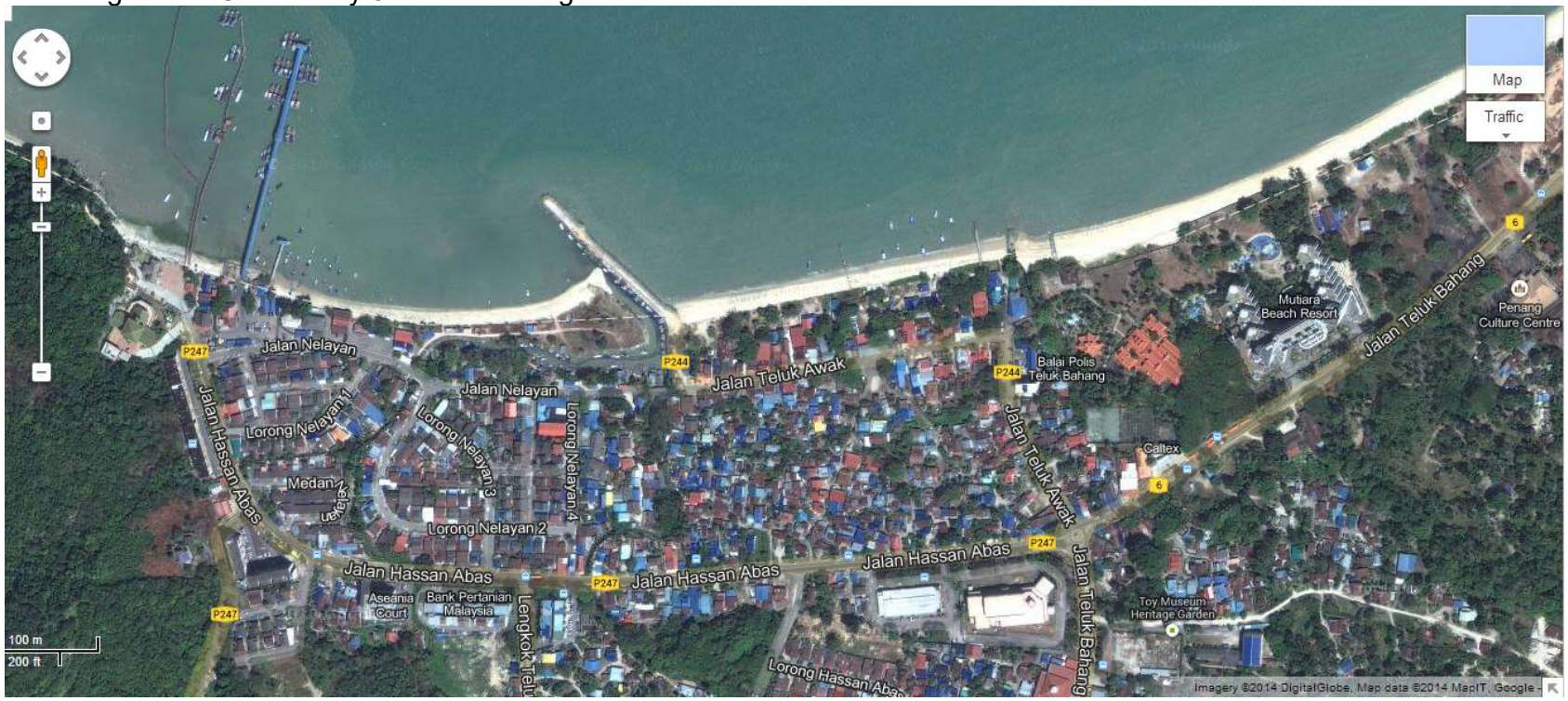
Note: The squatters' settlement located at the low level along the shoreline can be seen (in the red dotted line). Houses built up from zinc and plywood that made them fragile to tsunami wave as opposed to the housing areas that were properly built with concrete.

Figure 1.6: Case Study 2: Batu Ferringhi

Source: Digital Globe, 2013

Note: Batu Ferringhi dominated by squatters, restaurants, chalets, hotels and small scale tourism operators.

Figure1.7: Case Study 3: Teluk Bahang



Source: Digital Globe, 2013

Note: Teluk Bahang is populated by traditional Malay houses made up from wood and fisherman's boats and jetty (the blue strip on top left).

Figure 1.8: Case Study 4: Kuala Sungai Pinang

Source: Digital Globe, 2013

Note: Houses in Kuala Sungai Pinang suffered little damage due to their inland location. However, tsunami wave ran up through Pinang River until 3Km inland that caused damage to fishing boats, jetty and paddy fields.

A majority of respondents (54%) were in the low income group (RM9,601-RM24,000 or £1,745 - £4,363 a year), 38% were below poverty line (below RM9,600 or £1,745 a year), 6% were middle income (RM24,001- RM48,000 or £1,745 - £8,727 a year), and only 2% were high income earners (above RM60,000 or £10,909 a year).

Ethics

Participants were identified through the database of coastal areas communities in Penang Island accessed from the National Security Council, State of Penang Office. I use the term 'local people affected by tsunami' instead of 'victim' to address the participant in order to avoid any traumatic connotations. Further, local people who lost family members during the tsunami were not interviewed. The sampling was undertaken from house to house through the medium of semi-structured questionnaires in seven weeks of fieldwork in four affected areas from 12th July to 28th August 2014.

A consent form was handed to the participants to be signed before conducting any survey. The purpose of the project was explained to the participants and they were assured that their participation would remain anonymous. All information gathered during the sampling was accessed only by the researcher and was kept in a safe place. Data and information were coded and saved in the researcher's laptop with password protected. The hard copies of questionnaires were destroyed. Information collected from individuals was undertaken with duly informed consent from the participating individuals and treated with confidence and was used for research purposes only. The survey, interview, and research were conducted in line with the University of Sheffield's ethical research policies and this research was approved under these procedures.

Outline of the Dissertation

This dissertation is divided into 6 chapters. Chapter 1 is the introduction to the dissertation that consists of the research background, aim and objectives, research questions, research methodology, data collection methods, and case study approach. Chapter 2 discusses the concepts of disaster, risk,

vulnerability, resilience, transformative adaptation and conceptual framework that underpin this dissertation. Chapter 3 then explains the Malaysian disaster management structure and mechanism that include National Security Directive (NSC) No. 20, the government agencies' response to the 2004 tsunami, and applies it to the case study areas. Chapter 4 focuses on the local population's feedback and reaction in the case study areas towards government's response and recovery programmes; 'Wang Ehsan' (Monetary Aid), 'Rumah Tsunami' (Tsunami House) and Fisheries and Agricultural Assistance. Chapter 5 discusses indirect effects to politics in the case study areas, in which the ineffectiveness of government agencies' response to tsunami indirectly influence the voting pattern of affected people in these communities. Chapter 6 explores the transformative adaptation to disaster management mechanism as a drastic improvement to overcome the response weaknesses and to accommodate the affected people's feedback that consists of preparedness, tsunami early warning systems, tsunami drills and table top exercises, community based disaster risk reduction programmes, mitigation, embedding disaster mitigation in development planning, response, amendments to the NSC No. 20 and new standard operating procedures (SOP's) for tsunami. It also discusses indirect effects to local politics in the case study areas. Chapter 7 summarises the findings, research claims and presents the dissertation's conclusions and contributions.

Conclusion

The relationship between natural disasters and the transformative adaptation of a government's structure in managing unexpected disasters such as tsunami is not fully or easily understood because of the dynamism of political and social conditions. Central to disasters is the fact that they are context specific, localised and subjected to influence from the affected population's perceptions, in this case towards government's ability to respond rapidly and provide shelters and basic needs and avoid 'red-tape'. This research explores the consequences of the tsunami and to what extent it contributed to the government's decision to transform the disaster management structure and mechanism. The main research question is centred on the effect of 2004 tsunami that triggered transformation.

The proposition and hypothesis are based on the evidence from the secondary data that demonstrates there was a drastic and significant change of government's disaster management procedures and structures. Therefore, in order to validate this claim, it is essential to conduct fieldwork in the most affected areas using the case study approach by applying the mix-methods approach captured by qualitative and quantitative data. Open-ended Interviews (qualitative) were conducted with six politicians (Members of Parliament and State Assemblymen in the case study areas), senior government officials and an NGO leader. Random sampling (quantitative) using a semi-structured questionnaire as a tool for capturing quantitative data from 50 respondents of affected areas. This research methodology is most appropriate for this study because it offers rigorousness through triangulation of qualitative and quantitative data, such as information from the questionnaires was cross checked with the interviews and official reports from relevant government agencies. The fieldwork was also suitable since the research about disaster, as suggested by the literature is context-specific, case-base and localise.

In summary, this research contributes to the understanding of transformative change concepts and adaptation of government's disaster management mechanism due to unprecedented natural disasters such as a tsunami. The next chapter is a literature review and conceptual framework which discusses the concept of disaster, risk, vulnerability, resilience and transformative change and adaptation.

Chapter 2: Literature Review and Conceptual Framework

Introduction

The focus of this chapter is, first, on the literature's definition of disaster; second, it explores key concepts underpinning disaster management (risk, vulnerability and resilience), and; finally, it examines transformative change and how it differs from incremental change.

Any review of the natural disasters literature is complex due to the range of disciplines from the natural and social sciences that are involved, such as geography, geo-physics, geology, sociology, politics and economics. Natural disaster management can be viewed historically as well as through governance (law, policies and administrative procedures), the stakeholders involved, different approaches (top-down and bottom-up); phases of disaster (risk assessment, mitigation, response, recovery, and preparedness), and type or class of disaster (natural, or a result of human interference with the natural environment). This diversity poses a complex analytical problem. I propose to focus on addressing the response and recovery stages because the vulnerability of communities to disaster and the capabilities of government agencies in dealing with unexpected disaster can be best assessed during these stages. This is also the phase when local politics is likely to begin to manifest itself. I begin by defining a natural disaster.

Defining a Natural Disaster

There are three broad schools of thought with regards to natural disaster definition and classification; (i) natural phenomena (Bankoff, Frerks, & Hilhorst, ,2004; Quarantelli, 1986; UNISDR, 2009c). (ii) man-made (Shaluf, 2007),and (iii) interaction between nature and human activities (Hooke, 2000; Picou, Marshall, & Gill, 2004; Shrivastava, 1994).

Bankoff at.al., (2004) describe disasters as a natural phenomenon of the Earth that leads to harmful effects on populations. Examples of the most frequently occurring natural disasters are floods, earthquakes, tsunamis, volcanic eruptions, and tornadoes. However, UNISDR (2009c) separates natural hazard and disaster. Thus, natural hazards are prerequisites of

disasters, although they agree that both emerged from the natural process of the Earth. Hazard is defined as:

> A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Hazards can include latent conditions that may represent future threats and can have different origins: natural (geological, hydro meteorological and biological) or induced by human processes (environmental degradation and technological hazards) (UNISDR, 2009a, p. 17).

Quarantelli (1986) claims that the term natural disasters was originally attributed to Acts of God in contrast to man-man disasters, events that are directly attributed to the acts of humans, intentionally or unintentionally (Shaluf, 2007). Examples include building collapse, Chemical, Biological, Radioactive and Nuclear (CBRN) incidents, industrial pollution, and acts of terrorism. However, current thinking indicates that the difference between natural and man-made disasters is increasingly difficult to distinguish due to the rapid encroachment into natural habitats by human activities for development purposes. Since the 1970's researchers in the disaster field begin to widen the scope of studies by shifting the attention to the interaction of human and natural resources and the environment that produces disasters.

This 'disaster-state' situation, as defined by Mitchelson (2011) is a physical and social situation of a disaster-affected community prior to the disaster striking. For example any community could be considered to be in a 'disaster-state' if its population living in poor-structured buildings or houses built with materials that do not conform to building code standards, without proper urban planning layout and design (particularly in slum and squatters areas). Another example is a population constructing houses on hilly terraces without reinforcement, massive land cultivation and deforestation without good agricultural practices, and housing areas located in disaster-prone areas such as near riverbanks that usually overflow due to heavy rainfall. These conditions, if uncontrolled will cause a deterioration of the environment that

may contribute to the more frequent occurrence of natural disasters such as floods and landslides (Hooke, 2000; Picou et al., 2004; Shrivastava, 1994). Therefore, natural disasters have been seen as a 'triggering agent' accelerating 'disaster-states' into actual catastrophes (Mitchelson, 2011).

According to Turner and Pidgeon (1997) disasters are produced by the interaction of misplaced of energy and misinformation (Disaster = Energy + Misinformation). Natural disasters stem from geophysical sources of energy from the earth and atmosphere collided such as landslides, or energy discharge from meteorological, hydrological and biological source such as typhoon, flood and epidemics. Man-made disaster rooted in war, the collapse of man-made structures, explosions, or derived from chemical and biological sources. Hence, from the perspective of disaster affected peoples, disasters (natural and man-made) are disordered and undesired energy. From the insider's perspective (individuals who have knowledge or access to the source of disasters), disaster occurrences maybe deliberately or unintentionally released due to human errors such as substandard maintenance of building structures and machines or failure to issue early warning of incoming disasters (Turner & Pidgeon, 1997).

Based upon these arguments, Turner and Pidgeon (1997) classified natural disasters into four categories of natural phenomena:

> First, natural phenomena beneath the earth's surface (such as earthquake, volcano eruptions and tsunami); second, natural phenomena of complex physical at the earth's surface (such as landslide and avalanches); third, meteorological or hydrological phenomena (such as cyclones, typhoons and hurricane, tornadoes, floods, sea surge, and drought); and fourth, biological phenomena such as locust swarms, epidemics or communicable diseases. Man-made disaster are classified into two categories: first, caused by warfare; conventional and non-conventional (nuclear, chemical and biological); second, caused by accidents, vehicular (planes, trains, ships and cars), collapse

> of buildings and other structures, explosions, fire, biological and chemical including poisoning by pesticides and pollutions (p. 9).

However, any effort to discriminate between natural and man-made disasters is challenging as the interaction between humans and the environment is extremely complex. Sociologists distinguish disaster from hazard, by virtue of its social effects on human life. Therefore, an earthquake or flood in areas without population is not a disaster (Tironi, Rodriguez-Giralt, & Guggenheim, 2014).Bolin and Stanford (1998) argue that disaster has two paradigms: behavioural, and structural. They argue that the behavioural paradigm analyses social effects and reactions to disaster derived from 'natural' phenomena such as a typhoon or cyclone. The structural paradigm has a wider perspective on disaster through the lens of the affected communities' traditional interaction with environment such as farming practices and deforestation.

There are considerable debates among disaster researchers regarding the status of famine, epidemics and droughts (FED's), as whether to categorise them as disasters or social problems. Quarantelli (1986) argues that famine, epidemics and droughts are not disasters because FEDs do not conform to the essence of natural disasters, which are unexpected, unpredicted, and sudden events, FEDs are therefore considered as a social problem. Dynes (2004) argues that famine, epidemics and droughts can be differentiated from a natural disaster in terms of location and rapidity.

FEDs mainly occurred in African rural areas, conflicted areas and takes place gradually. Sen (1981) argues that famine is a social problem derived from the failure of a state to distribute food to affected populations rather than caused by low precipitation or the infertility of crops. I argue that drought is a natural disaster stemming out of hot temperatures and low precipitation that contribute to soil infertility, which is unsuitable for farming, hence shortages of food supply lead to famine. So, famine is a by-product of drought that triggers a social problem. However, I agree with Sen (1981) that the drought and famine can be attributed to political malfunction particularly in conflicted

African countries that made it impossible to implement effective agricultural programmes with systematic irrigation systems. Therefore, I argue that the famine is a man-made disaster because it is controllable and can be avoided if an effective and efficient government is in place to address the distributional problems associated with drought and famine problems. While, I argue that epidemics can be categorised as social and health problems due to the outbreak of disease because of natural disasters such as flood that triggered cholera and malaria or dengue. However an effective response to disease rest on effective and efficient government.

This research is focused on the 2004 tsunami, which I define as a natural disaster because tsunami events are triggered by sub-sea earthquakes. In this case, the triggering agent is an earthquake (a natural cause) creating a 'disaster-state' in the areas affected (the impact).Moreover,, if the natural disaster (tsunami) occurs in a region or country that is already afflicted by social conflict and political tension, or lacks effective government, the natural disaster may trigger man-made disasters such as ethnic and/or religious conflict or hostility towards the authorities that may lead to an extended and extensive humanitarian crisis. Even in the absence of such conflict, a natural disaster such as a tsunami can generate enormous political tensions if governments are perceived to have prepared inadequately or their response and recovery programmes are felt by affected populations to be ineffective. Disasters are therefore stress factors that can trigger transformative change and adaptation of government's disaster management structures and mechanism.

Risk, Vulnerability and Resilience

I shall now discuss the concepts underpinning disaster management: risk, vulnerability, and resilience. UNISDR defines risk as,

> the combination of the probability of an event and its negative consequences. The word "risk" has two distinctive connotations: in popular usage the emphasis is usually placed on the concept of chance or possibility, such as in "the risk of an accident"; whereas in technical settings the emphasis is

> usually placed on the consequences, in terms of "potential losses" for some particular cause, place and period. It can be noted that people do not necessarily share the same perceptions of the significance and underlying causes of different risks (UNISDR, 2009a, p. 25).

Beck argues that "…highly developed institutions of modern society; science, state, business and military attempt to anticipate what cannot be anticipated" (2006, p. 329). Beck differentiates risk and catastrophe arguing that "risk means the anticipation of catastrophe" (Beck, 2006, p. 332), giving the example of the invention of the CFC cooling agent that nobody anticipated would contribute to global warming. Beck (2007) argues that, "risk concerns the possibility of future occurrences, the moment risk become real such as terrorist attack or nuclear power plant explodes, risk become catastrophes (p. 9). I offer a different argument regarding Beck's statement, "we are also trying to anticipate and prevent risks whose existence has not been proven" (Beck, 2006, p. 333), because some risks have been proven or, in the case of disaster risk, some anticipated hazards have become disasters. We can anticipate tsunamis to some extent by developing sub-ocean early-warning systems that detects the earthquake but the systems cannot make the correct prediction because not all earthquakes trigger a tsunami, so the risk remains and has to be mitigated and resilience improved. While a specific event may not be expected, the risk can be understood, thus the likelihood of it happening at some point can be anticipated at least to some degree. Also, the rapid travel time of a tsunami is a factor that limits the early warning of tsunami. As for the 2004 tsunami, it was unexpected and so could not have been anticipated so this shifts the focus to how the unexpected is handled by public authorities after it happens.

Beck (2007) and Agamben (2005) argue that the world of risk is changing because of the prediction of calamity, such as the war on terror led to the modification of civil aviation that applies strict regulation such as tight security inspections at airports and prior to departure as preventive measures to counter-terrorist plots. The passengers are forced to accept this new security situation at the expense of their freedom. In my case study, I argue that the

Malaysia Government uses the tsunami threat as the reason to introduce National Disaster Management Bill in 2010 that limited the freedom of its citizens. The debate on the Bill (now an Act) is ongoing because of the strong protest and objections from the opposition parties and human rights NGO's that claim the Bill abuses civil liberty since it may allow disaster management agencies to take pre-emptive measures such as forcibly evacuating vulnerable people .

Risk is a socially constructed phenomenon where different communities define risks differently according to their socio-cultural background (Beck, Adam, & Van Loon, 2000). Beck (1999, p. 135) argues that "it is cultural perception and definition that constitute risk" and so communities who live with risk find that risk shapes their knowledge, based on previous experiences of dealing with it. For the purpose of my research, the real risk is not the tsunami but the state of disaster preparedness by agencies concern that a disaster could become a serious crisis if triggered by an unexpected incident such as a tsunami. Therefore, the risk is the readiness of the disaster management agencies and vulnerable communities in the wake of a disasters such as a tsunami, and efforts by the authorities to predict a tsunami.

Many studies of post disaster communities found that society does not always become conflictual, but adapts to the new situation as argues by Carr (1932) and supported by Tironi et.al., (2014) who propose the communities become innovative, involving and cooperate well together. Solnit (2010) argues that disaster affected people became altruistic immediately after disaster struck by helping each other. She introduces the 'grass roots democracy' concept during a disaster combine in the 'altruistic society' and 'ephemeral government (a concept introduced by Taylor et.al, 1970) and civil society (in particular NGOs) in order to describe the sudden emergence of informal structures that voluntarily govern and manage the disaster affected communities promoting their resilience. This 'utopian' view of transitional structures are parallel to formal government's mechanism and challenge the political institutions and disaster management agencies, with less bureaucracy, acting as decision-making institutions such as demonstrated during the Hurricane Katrina (2005) in the US (Solnit, 2010). Barten (1969)

defines ‘altruistic society’ as a society that are unselfishly helping and look after each other’s welfare (in Solnit, 2010). Taylor et.al (1970) argue that this condition of the affected provides a platform for the appearance of ‘ephemeral government’, as opposed to the formal government mechanism as they discovered during tornado in Topeka, Kansas in June 1966, where leaders of civic societies worked together in response and recovery plans. This ephemeral government dissolved after the disaster subsided and as the situation returned gradually back to normal with traditional political institutions and government structures undertaking long term planning that required highly trained disaster management and rehabilitation agencies (Hannigan, 2012). However, I argue that Solnit’s claims cannot be generalised because my research shows that ethnic relations played a significant role in the aftermath of disasters, in which 57% stated that they helped neighbours based on ethnic preference during the 2004 tsunami. Therefore, I argue that the socio-political arrangements of a disaster-affected community depends on factors such as the historical background of relationships among different ethnic groups, social class inequality, and a multicultural society.

These considerations are also complicated by the response of government. The nature of the 2004 tsunami as an unexpected event imposed enormous stress on government, which was found wanting by the affected population because its policies were not suited to handling an unforeseen event and the result was radical transformative change as the government was perceived to have failed to deliver an effective response, or relief and recovery programmes. Therefore, the government introduced transformative adaptation in order to streamline the weaknesses during the tsunami response and to take into account affected population’s grievance, dissatisfaction and frustration and deal with a potentially serious political crisis.

Vulnerability

UNISDR defines vulnerability as “the characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard.” (2009c, p. 30). O'Keefe and Westgate (1977) were among the first to identify the significance of vulnerability as a product of the interplay between a natural disaster and communities that leads to the loss of lives

and damage to physical structures and economic activities. The level of vulnerability in communities is determined by many factors, such as their physical, social, political and economic characteristics, as well as improperly designed and poorly constructed houses, lack of government disaster risk reduction programmes, limited access to disaster early warning information, and lack of awareness (Blaikie, Cannon, & Davis, 1994; Bogardi et al., 2005; UNISDR, 2009c). As Hannigan (2012) provides example of the lower income group of Nicaraguans that built their houses on improperly developed mountainous slopes that exposed them to the danger of floods and earthquakes.

This argument differs from technical perspectives that define vulnerability from a natural forces point of view. I define vulnerable communities as communities that are located in disaster-prone areas and which are pluralistic in nature (multi-ethnic and/or multi-religion), are politically divided; and where disaster management agencies are not well prepared to respond effectively. These communities are prone to social and political tensions that may escalate into conflict under the impact of a natural disaster. The situation can worsen in the wake of disaster if the government response is ineffective or perceived to be based on racial preferences or practices nepotism, cronyism, and lack of transparency and accountability. As we shall see, this type of 'disaster response mechanism' and 'social' vulnerability is central to the transformative change and adaptation explored in this research.

Resilience

Concepts of sustainable and resilient communities, resilient livelihoods and building community resilience became prominent in disaster studies after the 2005 World Conference on Disaster Reduction (WCDR) in Kobe, Japan (Manyena, 2006). Resilience can be defined as "the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions" (UNISDR, 2009b, p. 24).

Kaplan (2005) categories resilience into, first, outcome oriented, and second, process oriented. Outcome-oriented resilience activities depend on existing bureuacracy that seek to mantain status quo and produce reactive contermeasures. Vickers and Kouzmin (2001) argue that process-oriented outcome resilience acts as a 'shock absorber,' or buffer, that minimises the negative outcomes. They argue that adaptation is part of disaster mitigation strategy, such as Zambezi Valley's communities of Zimbabwe cultivating 'nzembwe', a drought-resistant crop to replace maize as response to a long dry season. Manyena (2006) proposes that resilience and vulnerability are opposite ends of a continuum, where the nearest distance from the vulnerable point demonstrates more vulnerable and vice versa. O'Keefe et.al., (2015) argue that resilience is the ability of any community to quickly recover and absorb stress with minimum assistance from outside, by adapting and adjusting its culture, knowledge and practices.

For the purpose of the dissertation, I define resilience as a feature of disaster knowledgeable and close-knit communities that have an ability to respond using their own resources immediately during and after disaster (such as food supplies and clean drinking water) and enjoy a good rapport with government agencies. Resilience is central to these communities' relationship with political and governmental authority. One of the concerns of this dissertation is exploring how resilience could be used and improved in the aftermath of the tsunami through transformative adaptation. I argue that a homogenous society is likely to be more resilient than a heterogeneous society due to the former possessing a basic common understanding. In the absence of these common understandings, greater reliance will be placed on government and public authorities to ensure resilience but these may be perceived by different sections of the community to be biased against, or in favour of, some groups. These perceptions mean that a natural disaster can trigger serious conflict between communities and between communities and the public authorities. Government attempts to improve resilience, therefore, address not only the humanitarian consequences of the disaster but also seek to avoid any repeat of the disaster's political effects. It is clear that there is a shift away from looking at the cause of disasters as 'natural' forces to seeing disasters as a

complicated and complex interplay of human activities and the environment. I propose that whether disaster follows hazard (or vice versa), is only a matter of semantics, the consequences are still largely dependent on its scale and magnitude as well as how vulnerable or resilient of communities are to disaster. The next section examines the concept of transformative change and adaptation.

Transformative Change and Adaptation

Pelling (2010) proposes terms of "resilience (maintaining the status quo), transition (incremental change) and transformation (radical change)" to differentiate the process of changes in disaster-prone society, in which "no one pathway necessarily leads to 'progressive' or more equitable and efficient outcomes than the others. The evaluation of pathways and subsequent outcomes will be a function of context and the viewpoint of individual actors" (Pelling, 2010, p. 10).

Smit and Wandel (2006) and Smit et.al., (2000) differentiate between unplanned and planned adaptation (such as proper planning by the government or society). Smith et al. (2000) also argue that adaptation can be categorised "according to the form of action (technological, behavioural, financial, institutional or informational), the actor of interest (individual, collection), the scale of the actor (local, national, international) and social sector (government, civil society, private sector); and the costs and ease of implementation" (p. 225).

Q.E.D Foundation argue that there are three type of changes: Traditional, Transitional, and Transformational. "Traditional change is to improve existing practices and maintain the status quo, Transitional change focuses on change in the current practices to improve outcomes with tangential impact on status quo, while Transformational change aims to change both practices and outcomes, thus realigning the status quo" (Q.E.D Foundation, 2014, para 2). Thus transformative change can be differentiated from traditional change, in which the transformative change is a drastic and radical counter measures in order to overcome unexpected problems (as opposed to the traditional change that incrementally take place).

While *Transformative adaptation* is when the measures taken to respond to any disaster or climate change push the boundaries of the existing practices and transcend beyond the gradual adaptation (Dow et al., 2013). Revi et al. (2014) argue that transformative adaptation is either forced or chosen. Forced adaptation, such as distress migration triggered by disasters while an example of chosen adaptation is the relocation of vulnerable communities that are exposed to the rising sea level.

Pelling (2010, p. 114) argues that;

> transformative adaptation is to shift existing systems (and their component structures, institutions and actor positions) onto alternative development pathways, even before the limits of existing adaptation choices are met. This positioning of transformation pushes decision makers and those assessing adaptive capacity and action to extend their concerns from the proximate causes of risk (e.g., dwelling quality, livelihood structure or demographic characteristics) to its structural or root causes (e.g., social, cultural and economic relationships, power hierarchies).

IPCC Fifth Assessment Report (AR5) (2014) offers three narratives of transformation: "(1) transformation inciting foundational change by escalating of adaptation through technical interference; (2) transformation is possible when the gradual adaptation extended its boundary; (3) transformation explores root cause of development failures, such as increasing of greenhouse effects and how to address it" (Pelling, 2010, p. 115).

Transformative adaptation requires cooperation and mutual understanding from each parties' concern to be succeeded. For example, dispute and conflict of interest between law makers and local politicians hinder the process of legislation review in Quintana Roo, Mexico in an effort to protect the mangrove swamp as the natural coastal defence instead of coastal tourism development at the expense of mangroves (Pelling, 2010).

It is crucial to note that transformational adaptation challenge the standard operating procedures (SOP's) of an organisation, that may lead to unexpected and undesired outcomes (Pelling, 2010). Folke et al. (2010) discuss the integration of resilience, adaptability, and transformability across multiple scales. Resilience is the ability of a system to incrementally adapt within its limit. As part of resilience, adaptability is the ability to make adjustments in responding to changes within the current limit. Transformability is the ability to move into new trajectories. A crisis or disaster provides a window of opportunity for transformative adaptation as, for example, in the case of Hurricane Sandy (2012). Previously, the New York Metropolitan Region applied incremental adaptation to minimise interventions (and disruptions) of existing systems. However, Hurricane Sandy shows that transformative adaptation is required to address the threat of rising of sea levels as projected by the NPCC (Rosenzweig & Solecki, 2014).

Transformative change occurs when adaptation reached beyond its limits. Dow et al (2013) argue that the adaptation can be categorised into three types according to its risk level: acceptable risk, tolerable risk and intolerable risk. If the risk is acceptable, the community or organisation will adjust to current practices within the limits. If the risk is tolerable, adaptation will take place along the limits. However, if the risk is intolerable, the community or organisation will make fundamental changes in current practices, or undertake transformative change. Dow et al (2013) provide the example of farmers facing drought. First, the farmers will try to adapt by providing irrigation. However if this fails, the farmers may abandon the farm and change to other alternative activities for a living. For my research, the unprecedented 2004 Indian Ocean Tsunami can be seen as a trigger for transformative adaptation. The tsunami clearly challenged the existing government agencies' disaster management mechanisms, which though extensive were designed for monsoon floods, and pushed the adaptiveness of current SOPs to their limits, I argue that the government's disaster management agencies led by National Security Council took counter-measures in addressing the 'tolerable risk' posed by a tsunami by implementing transformative adaptation through various programmes, such as the national tsunami early warning systems,

community based disaster risk reduction, amending the NSC Directive No. 20, formulated new standard operating procedures (SOP's) for tsunami, and, in the long term, set up a new Disaster Management Act (2015) and National Disaster Management Agency (NADMA) (2015). Therefore, I conclude that the tsunami triggered the transformative adaptation of the government's mechanism to cater for new challenge.

Conclusion

The current literature suggests that discriminating between natural and man-made disasters becomes difficult due to the complex interaction and encroachment of human activities that may induce disasters. Conversely, natural disasters may produce man-made disasters, for example earthquakes may trigger extensive structural collapse. In my research into the 2004 tsunami, the disaster was a compound of the natural and the man-made. Thus, an earthquake triggers a tsunami (natural) and the tsunami destroys weak-structured buildings and produces a significant loss of life (man-made).

The impact of a disaster on a local community depends on their vulnerability and the resilience factors that determine level of risk. For my research, risk is associated with several interrelated factors, for example, low risk community (low vulnerability and high resilience) is defined as a community that has an efficient and effective response mechanisms, conformity to disaster-resistant building standard, regular maintenance of structures and equipment, combine with indirect factors such as good governance (in particular, high level of integrity and accountability). When disaster strikes, it challenges the regime's effectiveness and response mechanisms; in particular, can the ruling party mobilise and deploy rapid and swift response and rehabilitation to the affected community? In sum, resilience depends on the quality of the public authorities and the adaptiveness of the affected communities.

However, the question remains: Do natural disasters, such as droughts, earthquakes, floods, and storms, trigger transformative change and adaptation? This study engages with this question. It revisits an on-going debate over the nature of association between disasters and their after effects on politics, and in particular on the effectiveness of the government's disaster

response structure and mechanism. The crucial factor is the pre-existing specific conditions, including the resilience of a state's institutions to crisis. Once the characteristics of a state's socio-political environment is taken into account, the effect of disasters weakens or disappears completely suggesting that natural disasters become catalysts of change only in states, which are already in a 'vulnerable state'.

Disasters create enormous social tensions and place stress on government and potentially can change the socio-political situation of an affected country if the government has been perceived not to swiftly respond to, and decisively manage, its aftermath. The consequences could be magnified if the disaster occurs in a country already afflicted by a long standing social tension, Disasters are therefore stress factors and may trigger transformative change.

The interplay between natural disasters, politics and a government's disaster management mechanisms, however, are not well studied. Thus, this research explores the interaction of a natural disaster and the socio-political condition of affected communities that may accelerate transformative adjustment of the government's disaster management. In this research, the real risk is not the event itself but the 'state of disaster preparedness' that could become part of a serious crisis if triggered by an unexpected event. Therefore, the 2004 tsunami could be seen as a catalyst that strikes vulnerable communities in a 'disaster state', located in disaster-prone areas and which are pluralistic and socio-politically divided, and where government is not well prepared.

Communities are vulnerable to turmoil that may turn to profound political conflict under the impact of a natural disaster. The situation can worsen if the government response is perceived to be acting on racial preferences or in favour of some groups. A homogenous society is potentially more resilient than a heterogeneous, so a natural disaster can trigger serious conflict between communities and between communities and the public authorities. Next Chapter explores Disaster Management Mechanism in Malaysia.

Chapter 3: Disaster Management Mechanism in Malaysia

Introduction

This chapter explores in detail the disaster management structures and mechanisms in Malaysia and applies the concepts of risk, resilience, and vulnerability in the wake of tsunami, into the case study areas in Penang, Malaysia.

Disaster management in Malaysia is under the purview of the National Security Council (NSC) chaired by the Prime Minister. This chapter outlines the NSC's creation, purposes, strengths and weaknesses in managing disaster response and recovery as it is the main coordinating agency. The NSC was established in 1971 as a successor to the then National Action Council (Majlis Gerakan Negara, or MAGERAN). MAGERAN was set up to manage the consequences of the 1969 civil unrest that stemmed from ethnic riots between the Malays and the Chinese. These followed the p the 1969 General Election, in which the Chinese dominated opposition parties (Democratic Action Party-DAP, and Malaysian People Action Party/Parti Gerakan Rakyat Malaysia-GERAKAN) won a majority of the urban seats and formed up a new state government for the first time since independence (1957) in Penang, Selangor and Kuala Lumpur.

However, the main function of NSC shifted thereafter to national security, while disaster matters is managed by the local government until the shocking case of the high rise Highland Tower condominium building collapse in 1997, where the Federal Government intervened in the response and recovery process due to a shortage of resources in local government The Federal Government realised the need for central agency to consolidate and coordinate the resources and expertise of the various agencies. The Federal Government decided to expand the NSC's functions to include disaster management by forming a Disaster Management Division. In the same year (1997) the NSC formulated NSC Directive No. 20 in 1997, an executive order intended to coordinate the various agencies concern in managing disaster. I shall now discuss NSC No. 20 in detail.

National Security Council (NSC) Directive No. 20

The government's basic 'top-down' structure and mechanisms in terms of the roles and responsibilities of Federal and State's agencies in dealing with natural disasters were constituted in National Security Council (NSC) Directive No. 20 of 1997 that sought to minimise the impact of a disaster after its occurrence on people and property. NSC Directive No. 20 was formulated following the collapse of the Highland Towers in 1993. Prior to the Highland Tower tragedy, there were no clear and comprehensive guidelines, or standard operating procedures (SOP's), for managing disaster. After the incident, government realised that a complete disaster preparedness and response mechanism should be formulated. Subsequently, NSC Directive No. 18: (Establishment of Special Search and Rescue Teams), and NSC Directive No. 20: (Disaster Management Mechanism) were approved. Both were regulated by executive power of the Prime Minister as the Chairman of National Security Council in May 11, 1997.[2] Directive No. 20 stated that the NSC was responsible for coordinating the response and recovery programmes and all related activities (Abdullah et al., 2005). However, prior to the 2004 tsunami, NSC Directive No.20 did not mention tsunamis and so tsunami SOP's were could not be developed. Thus, I argue that a great deal of disaster planning is reactive and as a response to a disaster.

Disaster management in Malaysia is generally a 'bottom-up', decentralised approach, because disasters are usually highly localised and so are better handled at local level, but are coordinated by the National Security Council (NSC) District office through the District Disaster Management Committee, chaired by a District Officer. When disasters strike, and if the district has a shortage of capability and capacity in term of assets, human resource and financial, then the State and Federal governments will provide assistance. However, if the disaster's effects are spread over, or involves, two or more districts, the NSC State office takes over and activates the State Disaster Management Committee, chaired by State Secretary and with heads of

[2] Interview with the former Deputy Secretary of National Security Council, Che Moin Umar on 7th August 2014.

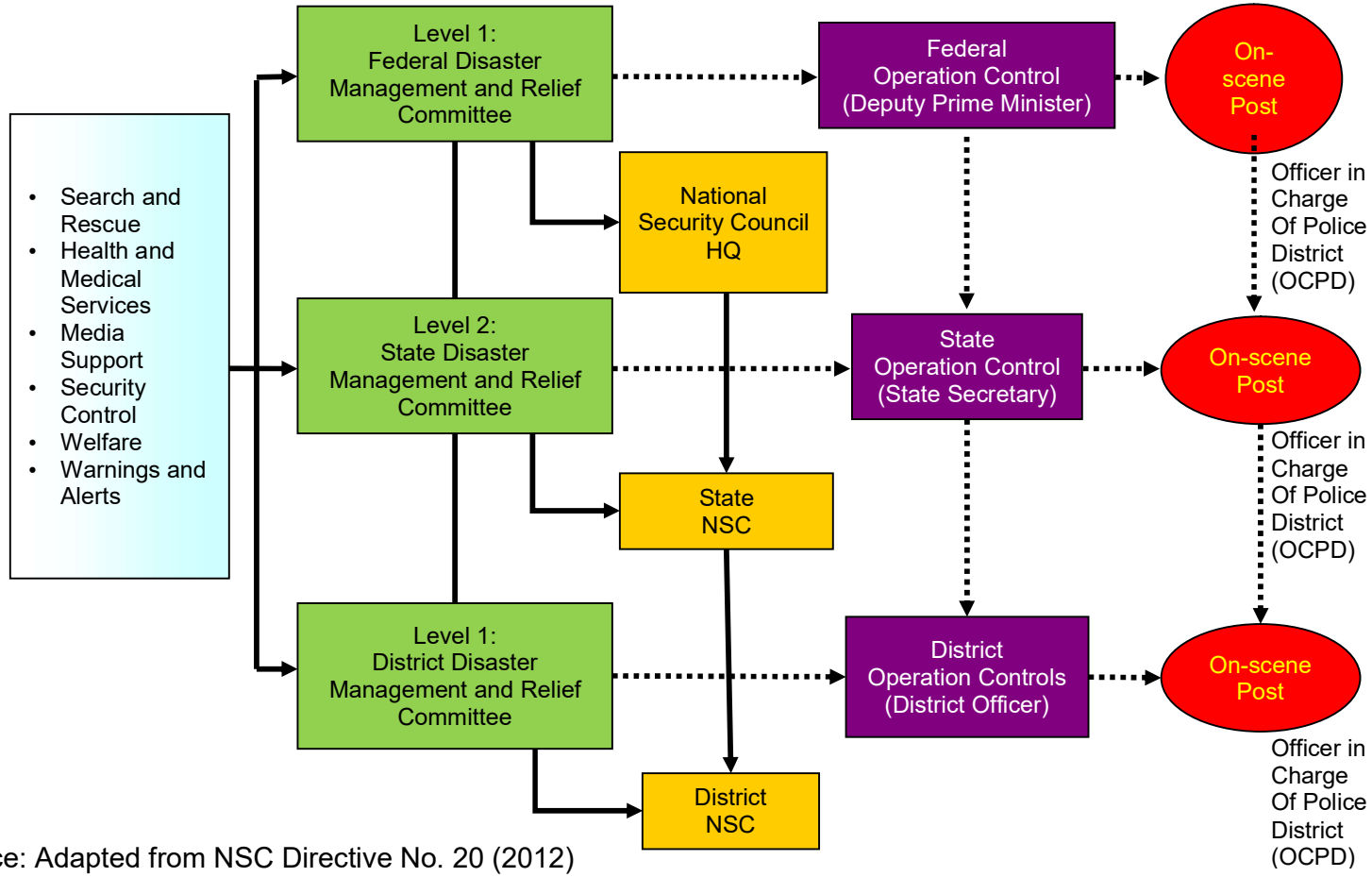
relevant agencies at state level as members of the committee. Where a disaster involved two or more states, the NSC federal headquarters in Putrajaya will take over, and the Deputy Prime Minister will chair the National Disaster Management Committee.

l The procedure for disaster management at state level is for, for example, the NSC Penang office, with direction and assistance from NSC Headquarters in Putrajaya, to immediately set up a State Disaster Committee and activates Level 2 (State Level, as the disaster involves two or more districts) of the disaster response mechanism, according to procedures in NSC Directive No. 20 (Figure 3.1). Relevant government agencies such as Police, Fire and Rescue, the Welfare Department, the Health Department, the Public Works Department, Civil Defence, and the Marine Police are called to meetings to conduct and coordinate search and rescue efforts. As stated in NSC Directive No.20, each agency has specific roles and responsibilities during disaster management episodes. For example, as shown in Figure 3.2, the Police role is to ensure public order and security and smooth traffic flows and ensure access for first responders (such as ambulances and fire brigades), Fire and Rescue leads the search and rescue activities with the assistance of Civil Defence, Marine Police and NGO's, such as Red Crescent and St. John's, the Welfare Department responsibility is to provide temporary shelter, drinkable water and food to the affected people (National Security Council, 2012).[3]

NSC Directive No. 20 has been reviewed two times (the latest was in 2012) to take into account the dynamism and complex nature of disasters, which includes new types of disaster such as tsunamis. Furthermore, natural disasters involved many different stakeholders, such as NGO's, private companies and political parties that required total disaster risk management strategies. Government realised the importance of engaging vulnerable populations in disaster-prone areas in order to empower them to be more prepared and resilient, through the implementation of Community Based Disaster Risk Reduction (CBDDR). Government also subscribed to current

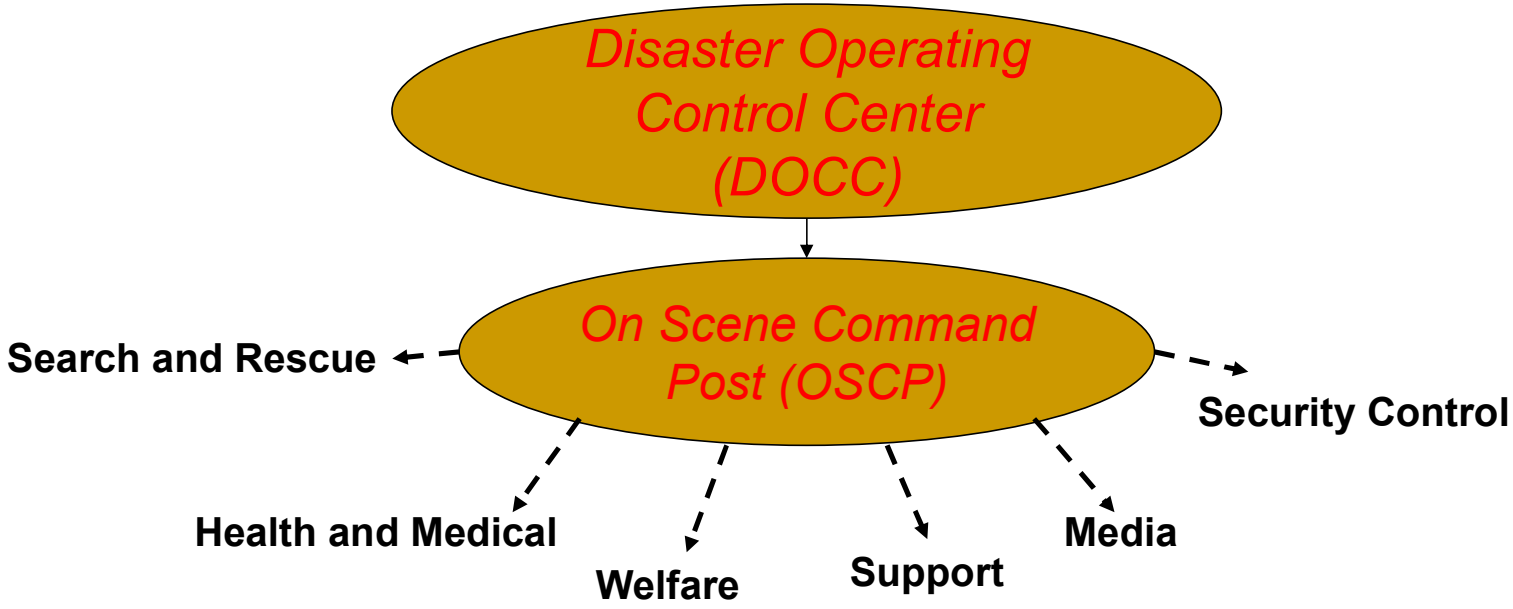
[3] Interview with Principle Assistant Secretary of Disaster Management Division of NSC Putrajaya on 5th August 2014.

Figure 3.1: Structure of Disaster Management in Malaysia



Source: Adapted from NSC Directive No. 20 (2012)

Figure 3.2: Command and Control System during Disaster Occurrences



Source: Adapted from NSC Directive No. 20 (2012)

changes in policies at local, regional and international levels, such as AADMER and the Hyogo Framework for Action 2005 – 2015 (HFA). Directive No. 20 outlines the policy and processes on disaster and relief management by establishing a management mechanism in the pre-, during and post disaster periods; and determining roles and responsibilities of various agencies involved in disaster management (see Figure 3.1 and Figure 3.2).

Directive No. 20 defined disaster as;

> "an event that constitute a serious disruption of the functioning of a community or national affairs involving widespread human, material, economy or environmental losses and impacts which exceeds the ability of the affected community or society to cope using its own resources and requires extensive mobilization of resources" (National Security Council, 2012, p. 2).

Disaster Risk Reduction means "the concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including reduced exposure to hazards, lessened vulnerability of people and property, sustainable management of land and the environment and improved preparedness of individuals, community and agencies to face disasters" (National Security Council, 2012, p. 2). Since the 2004 tsunami, the NSC has coordinated various workshops and seminars in order to review NSC Directive No. 20 and to include response and recovery structures and processes for earthquakes and tsunamis. Two new standard operating procedures (SOP's) were formulated specifically for tsunamis and earthquakes (will be discussed in details in Chapter 5).

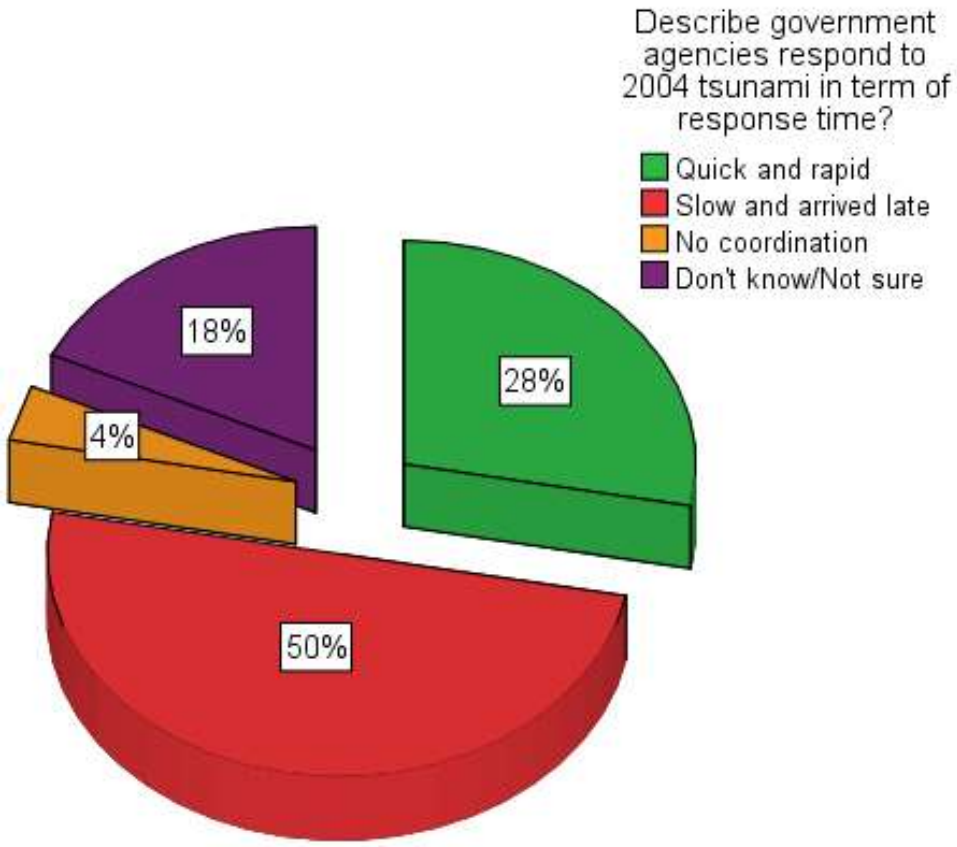
However, at the time of the 2004 tsunami, the 'bottom-up' approach dominated because of the absence of any early warning of, or experience with, tsunamsi. For example, in 2004 the Balik Pulau District Fire and Rescue Station in Penang received an anonymous distress call from Pasir Panjang between 1.30pm to 2.00pm, followed by several other calls from various locations in Penang's coastal villagers concerning the tsunami. The officer in

charge at Balik Pulau District Fire and Rescue Station informed Penang State Fire and Rescue office but there was no effective response because they had no plan for such an event. According to my sample of respondents affected by the tsunami in Batu Ferringhi, Tanjung Bungah, Teluk Bahang and Kuala Sungai Pinang, 50% described the responders' agencies as slow and arriving late (Figure 3.3). In a similar vein, my interviews with the Secretary of NSC (he was the Chief of Staff to the Prime Minister in 2004) and the then Deputy Secretary NSC (he was then Under Secretary Disaster Management Division during the 2004 tsunami incident) on 7th August 2014 confirmed the late response of government agencies because: first, many civil servants were away on year-end holidays; second, the tsunami was an unanticipated incident because the agencies concerned perceived it as 'normal' earthquake; third, the disaster management agencies, including the first responders (police, fire department, civil defence and ambulance services) did not have any experience dealing with tsunamis; and, fourth, there was no early warning system .

The Tsunami

The tsunami could be considered as a 'black swan' incident because it was unforeseen and unpredictable. The black swan theory was introduced by Nassim Nicholas Taleb, and is a metaphor of 'surprise' event that has significant and major impact. It stems from the proposition that holds all swans are white and so black swan do not exist until the unforeseen black swan was discovered found in Australia (Taleb, 2007). Taleb uses the black swan analogy to explain unpredictable and unprecedented events that have a transformative effect and to show that one single observation can challenge and invalidate an hitherto widely accepted generalisation (Taleb, 2007). In the case of 2004 Indian Ocean Tsunami, the impact would be less devastating if the earthquake and tsunami had the early warning systems been built and the affected areas were not highly urbanised and populated. The key point is that communities had no prior experience of this type of event. Malaysia is

Figure 3.3: Perception on Government's Response to Tsunami



located on a stable tectonic plate and flanked by neighboring counties (Indonesia and The Philippines) that act as natural buffers to tsunamis despite frequent sub-ocean tremors. Although tremors from earthquakes in Indonesia were experienced by the Penang population nobody expected the tsunami because nothing like it had happened previously. However, this most unexpected event radically changed Malaysian disaster management landscape.

The tsunami was triggered by a magnitude 9.3 earthquake at 0:59 GMT (08.59 Malaysian time), with its epicenter about 160 km from Banda Aceh and 900 km southwest of Penang (Horton et al., 2008). The most devastated area in Malaysia was Penang. The State of Penang is composed of two regions: Penang Island (293 square kilometers) and Seberang Prai (753 square kilometers) on the mainland of Peninsular Malaysia. Penang Island is the most urbanised (80.9%), with a high population density (1,537 people per square kilometre) and is a tourist island. Penang's population in 2012 is estimated 1,611,100 with 41.3% Malays and Bumiputra ('son of the soil', or: indigenous people), 42.1% Chinese, 10% Indians, and 0.2% other (Department of Statistics, 2010).The northern coast of Penang is a significant tourism belt with sandy beaches, international hotels, restaurants, shops and local tourism service providers with Tanjung Bungah as the centre of tourism. Traditional Malay villages scattered around Tanjung Bungah along the north-south coast line are without protection from coastal defense systems, hence the villagers were fully exposed to the tsunami and became the most affected communities of 2004 Tsunami (Horton et al., 2008).

The tsunami was preceded by abnormal low tide and then by a two to three meter high wave. These near shore waves raised river levels by up to 2 meters above the banks confining villagers within their houses (Abdullah, Tan, & Ghazali, 2005). Penang's tsunami was captured in amateur videos, for example, as shown in documentaries aired by U.K Television on Channel 4 such as 'Tsunami: Ten Years On' (Tiley, 2014), 'Tsunami Caught on Camera' (Sutherland, 2009), 'Japan Tsunami: How it Happened' (Nicholson, 2011), Tsunami: The Aftermath' (Nalluri, 2006) and 'The Impossible' (Bayona, 2012).

As in other places hit by the 2004 Tsunami (Aceh, Indonesia; Galle, Sri Lanka; Tamil Nadu, India, and Phuket, Thailand) there were reports of unusual behaviors by animals, the dramatic receding of seawater, which was compared to the sound of 'jet engines'(Dengler & Preuss, 2003; Dudley & Lee, 1998; Tibballs, 2005). Initially, many ran to the beach out of curiosity to see the unusual phenomenon of the first wave of tsunami without knowing of the incoming devastating second wave. This was corroborated by interviews with Secretary of National Security Council, Mohamed Thajudeen Abdul Wahab and former Deputy Secretary of National Security Council, Che Moin Umar (interviews conducted on 7th August 2014), who claimed that the problem was that the public had never heard about the 'tsunami', and referred to it as 'high and big wave'. Unfortunately, many who went to the beach out of curiosity were then washed away by the tsunami. In Penang, the second wave extended up to maximum of 1.5 km of the seabed at Pulau Betong (Horton, 2005).

A second wave travelled from the northeast of Penang at 2.04PM and accounted for the extensive damage (Figure 3.4). It destroyed the jetties of the fishermen in Tanjung Tokong with fishing boats thrown 300m from seashore, smashed 1 meter high concrete road dividers at Gurney Drive, swept away villagers' houses at Tanjung Bungah, and caused serious coastal flooding that wiped out paddy fields up to 1 km inland (Abdullah et al., 2005; Colbourne, 2005; Horton et al., 2008; Krishnaswamy, Subramaniam, Indran, & Low, 2012). Panic became apparent in the hardest hit areas in Penang as stated by my respondents (60% stated panic and a chaotic situation existed and 20% stated individuals were only looking after him/herself) during the fieldwork in Tanjung Bungah, Batu Ferringhi, Teluk Bahang and Kuala Sungai Pinang (Figure 3.5). The tsunami accounted for RM100 million (approximately £550 million) in losses, claimed 68 lives, 6 missing, and affected 8,292 people in Malaysia (Table 3.1) (Saw, 2012). In Penang, there were 52 deaths, 5 missing, 206 injured, 521 houses and 1,430 boats were destroyed (Table 3.2)

Figure 3.4: Example of Devastated Impact of Tsunami in Batu Ferringhi and Tanjung Bungah, Penang

Source: Adapted from Saw (2012).

Figure 3.5: Reasons of No Coordinated Efforts during Tsunami

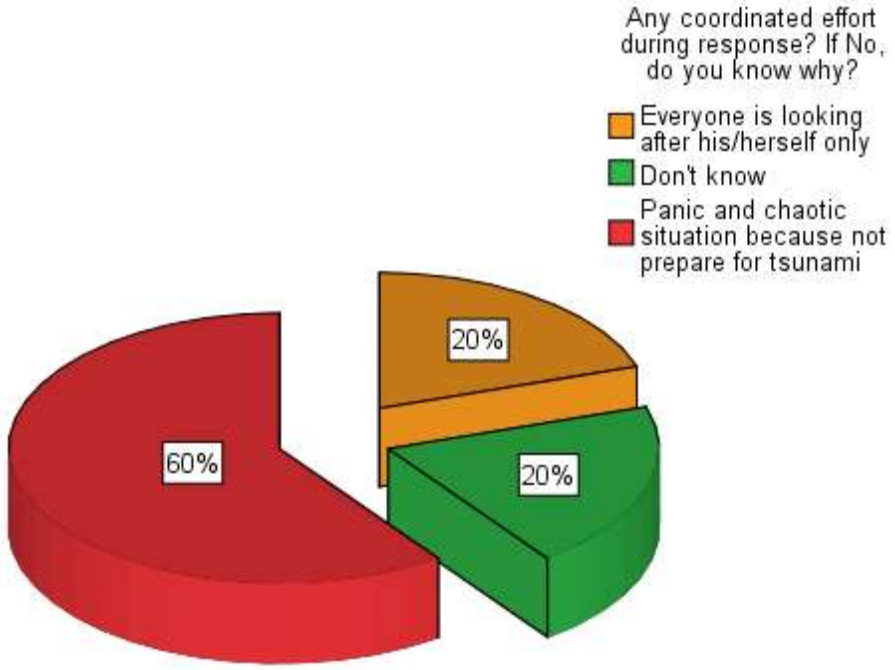


Table 3.1: Tsunami Statistics for Malaysia

Deaths	68 people
Missing	6 people
Affected people	8,292 people
Property Damages (approximately)	RM100 million

Source: Adapted from Saw (2012)

Table 3.2: Tsunami Statistics for Penang

Overview			
Deaths	**Missing**	**Injured**	**Damage**
52	5	205	521 houses 1430 boats

Deaths by district		
District	**Sites of casualities**	**Deaths**
Northeast	Batu Ferringhi and Tanjung Tokong	23
Soutwest	Teluk Bahang and Pulau Betong	27
Seberang Prai (Central)	Bukit Mertajam Hospital	0
Seberang Prai (North)	Jalan Padang Benggali and Teluk Air Tawar	2
Total		52

Source: Adapted from Horton et.al (2008)

(Horton et al., 2008). In total 2949 people were evacuated to various emergency shelters that included nine village halls, six schools and one fire station (National Security Council Penang Office, 2005). The state's efforts were focused on response, which is not surprising as this was an unexpected event. Most of the dead were fishermen at Tanjong Tokong, picnickers at the Pasir Panjang and Miami beaches, and villagers in the Tanjung Bungah areas. The local picnickers were killed by tsunami because they did not run to higher ground immediately after the first wave but stood watching out of curiosity, whereas international tourists on the nearby hotel beaches received an early warning from hotel personnel who received news of tsunami from their counterparts in Langkawi where the second wave struck one hour before it arrived in Penang (Table 3.3) (Abdullah et al., 2005; Horton, 2005).

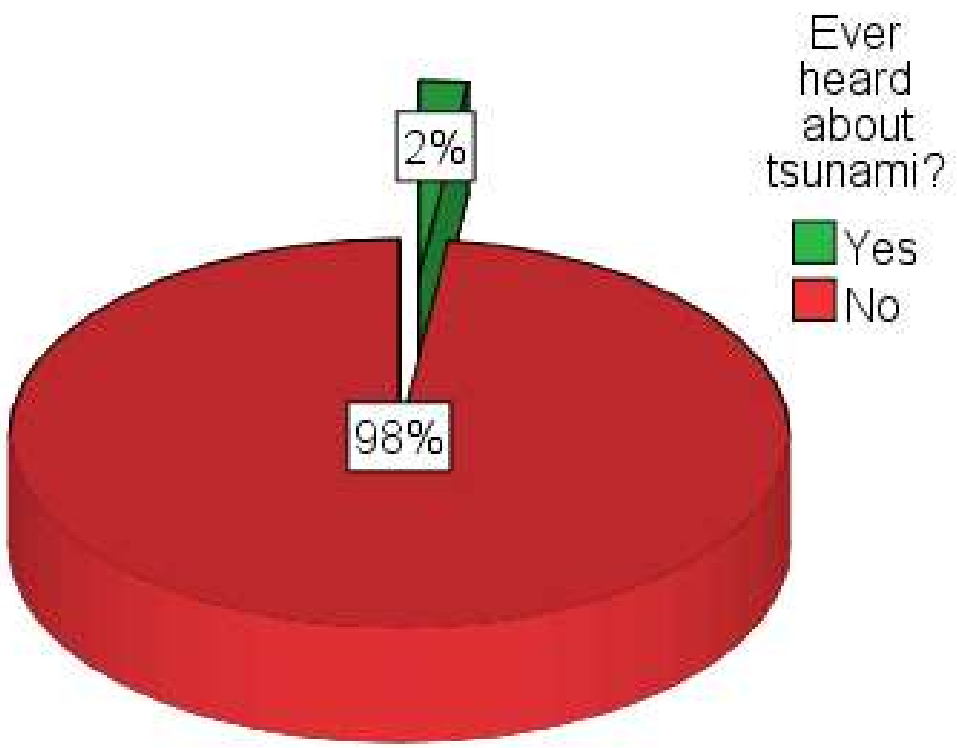
Table 3.3: Tsunami Arriving Time

Location	**Tsunami arriving time**
Langkawi, Kedah	3 hour
BalikPulau, Penang	4 hour
Batu Ferringhi, Penang	4 hour 24 minute
Kuala Kedah, Kedah	4 hour 30 minute
Gurney Drive, Penang	4 hour 30 minute
Bagan Datok, Perak	5 hour 30 minute
Sabak Bernam, Selangor	6 hour

Source: Adapted from Saw (2012)

Many local people had no prior knowledge on tsunami and its dangers as illustrated by my research sample, 98% of them never heard of tsunami (Figure 3.6).

Figure 3.6: Prior Knowledge on Tsunami



The next section discusses the government responses, divided into short term (within 3 months after the tsunami) that focus on immediate rescue and relief,

and long term (more than 12 months) on recovery and rehabilitation (Yasin, 2009).

Short Term Government Responses

This section examines Malaysian experience in dealing with the tsunami's immediate effects. How did the government and local communities respond? This will be explored by comparing a 'top-down' and 'bottom-up' perspective to disaster response. The 2004 Tsunami generated major new challenges for Malaysian government agencies, policy makers, natural disaster scientists, and local communities, in other words, it was a transformative event. Government agencies confronted a new form of natural disaster without clear mechanisms and standard operating procedures (SOPs) because the existing SOP's were developed for monsoon flooding and landslides, which was not surprising as there had been no previous similar event.

The Secretary of NSC (the then the Chief of Staff to the Prime Minister) claimed in an interview that, when he went to the hardest hit areas in Penang to survey the extent of damage, the NSC was not in the picture during the first and second day of the tsunami. He was only able to contact the Police in order to move around the affected areas. Only a few days after the tragedy, the Prime Minister, who had rushed back from a year-end holiday, had a meeting with disaster management agencies to discuss and coordinate recovery and rehabilitation. Subsequently, the relevant agencies coordinated by NSC began to relocate affected population to temporary shelters and transit houses. He remembered clearly that the affected population was very angry with the government because of the late response, and the Governor's visit to the areas that was not welcomed by the people. This was corroborated by mass media reports, such as Malaysiakini (2005), in a comment section, one of the affected population claimed that local NGO's arrived quicker than government agencies. For example, in Pulau Betong, Penang, religious groups such as from a Buddhist temple responded very quickly and without discrimination on the grounds of race or religion. This claim is in line with my research in term of the local communities' initiatives in responding to the tsunami: 40% of my sample stated there were no coordinated government efforts because of the panic caused by tsunami that had never been

experienced before, as pointed out by 60% of respondents (Figure 3.7). Only 32% claimed that the coordinated efforts took place during the response and this was dominated (60%) by local NGO's such as association from Buddhist Temple in Penang (Figure 3.8). However, the recognition of coordination at local level increased to 36% in the post reconstruction period. The perception was of government agencies with limited capacities in term of personnel, transportation and equipment, for instance, the Balik Pulau Fire and Rescue Station, had only six officers on duty during the tsunami on 26 December 2004 and one rescue boat. Nevertheless, after the State Disaster Committee was set up under NSC 20, assistance came from other agencies such as the Malaysian Air Force to support the search and rescue efforts. Initially, the total personnel involved were 24 but this increased to 50 on 27th December, including five divers and more search and rescue equipment such as speed boats, jet-ski, and helicopters on 28th December (Horton, 2005).

After the 2004 tsunami, the NSC coordinated efforts to develop two new SOPs for earthquakes and tsunamis (discussed in detail in Chapter 5). NSC Directive No. 20 was also amended in order to include provision for the 'Kumpulan Wang Amanah Bantuan Bencana Negara, or KWABBN' (the National Disaster Relief Trust Fund) which was managed by the NSC and received a financial allocation annually from the Government, as well as public donations, and contributions from multi-national companies. KWABBN is also used for operating expenditure of various agencies for recovery and reconstruction after a disaster.[4]

[4]Interview with Principle Assistant Secretary of Disaster Management Division of NSC Putrajaya, Mr. Norhisham Kamarudin on 5th August 2014.

Figure 3.7: Percentage of Coordinated Efforts during Tsunami Response and Post-Tsunami Reconstruction

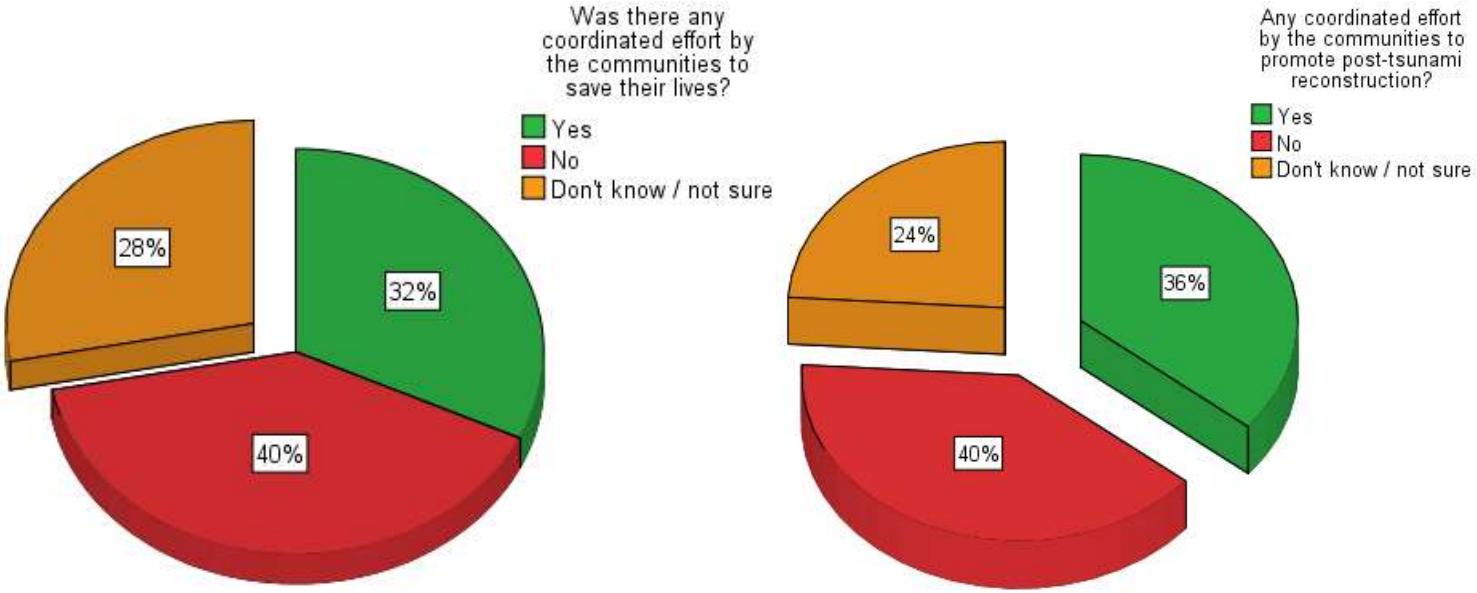
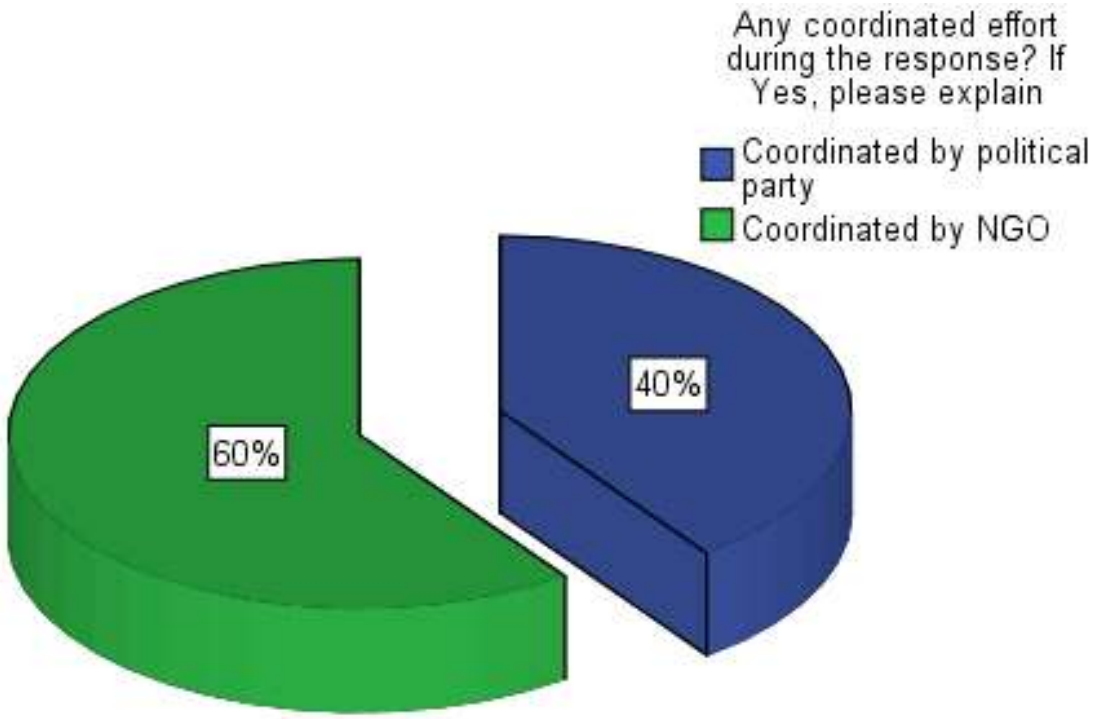


Figure 3.8: Percentage of Coordinated Efforts by NGO and Political Party



Long Term Programmes

The Malaysian Government executed three long term recovery and rehabilitation programmes for tsunami affected people. First; 'Bantuan Wang Ehsan' (Monetary Aid) managed by National Security Council, 'Rumah Tsunami' (Tsunami Resettlement) developed by SPNB ('Syarikat Perumahan Negara Berhad' - National Housing Company Limited) and Fisheries and Agricultural Assistance managed by Fisheries Development Authority of Malaysia ('Lembaga Kemajuan Ikan Malaysia' - LKIM). Social Welfare Department responsible for providing and managing temporary shelters. I outline the structure and purpose of these organisations in the next sections.

Among the responsibilities of National Security Council in Disaster Management as stated in the NSC Directive No. 20 are (National Security Council, 2012, p. 18); first, NSC is the Lead Agency for Disaster Management that is responsible for coordinating and monitoring the disaster management policies and mechanisms; second, coordinate disaster management drills, search and rescue operations; third, monitor the implementation of Community Based Disaster Risk Reduction (CBDRR); fourth, to educate public and disaster management officials by conducting training and awareness programmes; fifth, to manage Disaster Management Trust Fund ('Kumpulan Wang Amanah Bencana Negara' - KWABN). During the tsunami, NSC disseminates 'Bantuan Wang Ehsan' which is a one-off monetary handout from the Federal Government through National Security Council (derive from KWABN) to ease the burden of the affected people. However, it was not a compensation scheme because its objective was to hand over marginal amount of RM500 (GBP90.90) to RM1000 (GBP181.81) immediately after the tsunami for petty cash expenditures.

National Housing Company Limited ('Syarikat Perumahan Negara Berhad' - SPNB) is a Malaysian government owned company set up in August 1997 under the Ministry of Finance. Its main purpose is to build affordable houses for low and medium income families in Malaysia (Syarikat Perumahan Negara Berhad, 2005). The affordable housing projects are known as 'Rumah Mampu Milik' with price starting from RM 42,000 to RM 60,000 (approximately GBP 7,636 to GBP 10,909) selling for specific target group such as low income groups. SPNB also partnered with Armed Forces Fund Board ('Lembaga Tabung Angkatan Tentera' - LTAT) to

develop 6,550 unit houses for army in the armed forces camps. SPNB also entrusted by the government to redevelop abandoned housing projects in the country.

During the post-tsunami period, SPNB has given the task to implement tsunami relocation housing scheme (known as 'Rumah Tsunami') to relocate tsunami affected people and vulnerable communities in tsunami-prone areas into new well-planned settlement with modern facilities, particularly in Penang (Syarikat Perumahan Negara Berhad, 2005). Priority was given to the people whose houses were completely destroyed by the tsunami. The housing price is below market price because it is subsidised by the Federal Government for the affected people, who only have to pay a nominal monthly instalment of RM100 (GBP18). The 'tsunami houses' were built with 3 bedrooms, living room and kitchen, in a housing complex with amenities such as mosque, children playground and kindergarten

Fisheries Development Authority of Malaysia ('Lembaga Kemajuan Ikan Malaysia' - LKIM) is an agency under the supervision of the Ministry of Agriculture and Agriculture Base Industry that was incorporated under Act 49, Malaysia Fisheries Development Board Act 1971 (Fisheries Development Authority of Malaysia, 2005).
Among the LKIM function is to ease the burden of disaster affected fishermen through Natural Disaster and Welfare Assistance (NDWA) Scheme of Fishermen, introduced on January 16, 2009. The NDWA Scheme provides assistance to the affected fishermen by allocating fund to repair damaged boats, buy new boats, fishing equipment and funeral expenses (Fisheries Development Authority of Malaysia, 2005).The fishermen have to register with LKIM and a members of the Area Fishermen's Association in order to be considered for assistance (Fisheries Development Authority of Malaysia, 2005).

The Social Welfare Department was established in April 1946 during the Second World War and emergency period to support the welfare of families affected by the war. The department's function expanded to include rehabilitation services of social issues and community development (Department of Social Welfare, 2005). According to NSC Directive No. 20, the roles and responsibilities of Social Welfare Department during disasters are (National Security Council, 2012, p. 41);

1. To prepare and manage evacuation centers for disaster affected people.

2. To provide and distribute food, drinking water, clothing and other basic needs to disaster affected people.
3. To register disaster affected people.
4. To provide advice and counseling to the disaster affected people.

Temporary evacuation centres are defined as buildings declared by the government through National Security Council to accommodate affected people. The evacuation centre equipped with basic facilities such clean water and electricity supplies. (Department of Social Welfare, 2005). Every centre run by a manager that assisted by several committees take in charge of registration, food, water supply, health and hygiene, security and safety, activity and volunteer.

The reaction and feedback from the affected communities on the government's short and long term programmes are varies, that will be the subject of discussion in details in Chapter 4.

Conclusion

Malaysia is not seriously vulnerable to earthquakes and tsunamis due to its geographical location outside of the 'ring of fire'. This tended to encourage complacency on the part of populations and government. However, the 2004 Indian Ocean Tsunami challenge this 'complacency condition', when the Malaysian government and its citizens were surprised by an unprecedented event that transformed disaster management practices.

The tsunami exposed the weaknesses of the existing disaster response machinery and level of preparedness of the government agencies led and coordinated by NSC because the agencies focused on the monsoon flood that usually occurred from November to January annually. Therefore, when the unexpected tsunami struck the Malaysian shore, the agencies concerned and the vulnerable communities by the seashore panicked. The absence of government agencies (in particular NSC) in the wake of the tsunami and their late response of first responders' agencies (fire and rescue department, ambulance services, and civil defense forces) stirred anger and

frustration of the affected people. However, the government led by NSC gradually took in charge and coordinate short term and long term recovery and rehabilitation programmes. The reaction and feedback of the affected people on this initiatives that reflect the strength and weaknesses of NSC will be the subject of discussion.

Chapter 4: Reaction and Feedback of the Tsunami Affected People

Introduction

This chapter concentrates on the tsunami's aftermath, in particular the effectiveness of, and reception by, the population in the case study areas of the government's recovery and rehabilitation programmes led and coordinated by NSC: 'Bantuan Ehsan' (Monetary Aid), 'Rumah Tsunami' (Tsunami House), and Agricultural and Fishing Assistance. This is followed by an examination on how these reactions affected government policies and transformed the disaster mechanism.

The tsunami and its effects represented a new challenge to Prime Minister Abdullah's administration because the existing disaster management structure and response mechanisms were designed for frequent (and therefore familiar) disasters such as monsoon floods and landslides, and not for the unexperienced tsunami. Several issues undermined the government's efforts in responding to the tsunami, in particular the late response of the disaster management agencies (as perceived by 50% of my sample in most areas), the late distribution of monetary aid, the perception of mismanagement of disaster relief funds and allegations of nepotism, cronyism and favouritism, (as perceived by 60% of the sample). This finding was supported by the interview with a former Deputy Chief Minister of Penang, a State Assembly person for Teluk Bahang Constituency. The next section discuss the affected population reactions to the government's response and rehabilitation programmes.

Case Study Areas in Penang State

Malaysia is a heterogeneous society consisting of about 80 ethnic groups and, as argued by Singh, "Politics in Malaysia has usually been portrayed as an extension of ethnic relations" (Singh, 2001, p. 42). There are three major ethnic groups: Malays (60% of the population), Chinese (25%) and Indian (7%) (Wan Husin, 2012). However, in Penang, the Malays and Chinese are almost equal with 636,146 (40.7%) and 670,400 (42.9%) respectively (Department of Statistics, 2010). The State of Penang is also a highly

urbanised as well asmulti ethnic. The ethnic composition of Penang is important because it suggests a vulnerability in political and ethnic relations. In contrast to the Malay dominated State of Kelantan, the Chinese assimilated into Malay Kelantanese culture, many speak the Kelantanese dialect and, as a consequence, there is no racial conflict recorded in Kelantan. In Penang this type of assimilation is out of question due to the more or less equal numbers of Malay and Chinese, which has led to ethnic political conflict. Surveys indicate that 36% of Chinese understand Malay culture and customs and likewise for Malay (36%) (Merdeka Centre, 2006); Malays, however, often perceive the Chinese to be opportunist, chauvinist, racist and 'ultra kiasu' (this term originated in the Hokkien dialect and means behaving selfishly and disregarding others, an attitude that stems from greed and promotes envy and selfishness) who dominated the economy. Some 71% of Malays describe Chinese as 'greedy' and some Chinese (26%) declare themselves to be 'not proud to be Malaysian' (Merdeka Centre, 2006).

Penang is divided by political parties based on racial lines. The major political parties are the United Malays National Organisation (UMNO), the Malaysian Chinese Association (MCA), the Malaysian Indian Congress (MIC), and GERAKAN (majority Chinese). UMNO, MCA and MIC (later joined by GERAKAN in 1974) established a coalition for elections known as the Barisan Nasional - National Front (formerly known as Perikatan from 1957 to 1974) that has formed successive Federal Governments since independence in1957. While on the opposition side, Democratic Action Party (DAP) is dominated by the Chinese, both the Parti Keadilan Rakyat (PKR) and the Parti Islam Semalaysia (PAS) are majority of Malays and form an alliance, the Pakatan Rakyat - PR or People's Alliance (formerly known as Barisan Alternatif - Alternative Front until 2008) to contest in the General Elections. Elections are held every 5 years as stated in the Federal Constitution but the Prime Minister has the right to dissolve the Parliament earlier (with the consent of the King), normally after 4 years. Both Federal and State Government (except for Kelantan) were dominated by the Barisan Nasional until the 2008 General Election, when unexpected political change (frequently described as a result of 'tsunami politics') occurred. In the 2008 General

Election, for the first time in 39 years, the ruling party (Barisan Nasional) failed to form the Penang State Government (winning only 11 out of 40 seats) (Table 3.5 and Table 3.6) (Election Commission, 2008).

Socially Penang's population is multicultural composed of Malays (Malay Language, religion: Islam), Chinese (language: Mandarin and Hokkien, religion: majority Buddhist) and Indian (language: Tamil, religion: majority Hindu). Malays dominated rural areas; Chinese dominate in urban and major town centres, whereas the Indian population is concentrated in rubber and oil palm estates (Table 4.1).

Table 4.1: Socio-economic Background of Three Main Ethnic Group in Malaysia

Ethnic	**Language**	**Religion**	**Location**	**Occupation**
Malay	Malay	Islam	Rural areas	Farmers and fisherman
Chinese	Mandarin and Hokkien	Confucius and Buddha	Urban areas	Business sector ranging from public listed company to petty traders
Indian	Tamil	Hindu	Rubber and oil palm estates	Rubber tappers and estate workers

Social segregation is aggravated by the education system, in which majority of Malay students (87,012) go to national schools with the Malay Language (national language) as the medium of teaching and learning, whereas a majority of Chinese (50,314) and Indians (6,303) opt for vernacular schools that use Mandarin and Tamil as their medium of learning (Penang Institute, 2013). This polarised education limits interaction and communication of multi ethnic pupils from the early age that is crucial for nourishing integration by learning and embracing each other's culture. Consequently, it has produced societies that are subjected to cultural and religious misunderstanding, sceptical and stereotype towards other ethnics.

Geographically, Penang State consist of two parts: Penang Island dominated by Chinese (53%), and the mainland, Seberang Prai, populated by Malays

(49%) (Department of Statistics, 2010). This complexity sometimes results in clashes and misunderstandings and the worst case of inter-ethnic violence in Malaysian history were the riots of 13th May 1969 where hundreds of Malays and Chinese were killed and thousands went missing (MAGERAN, 1969).

After the 2004 tsunami, several studies were conducted to assess the affected communities' views on the governments' response and recovery programmes. Horton et.al (2008) interviewed 30 respondents in Penang (Tanjung Tokong, Tanjung Bungah, Teluk Bahang and Pulau Betong); a study on public awareness on the tsunami disaster and early warning systems was conducted by Zainal et.al (2011); Krishnaswamy et.al (2012) studied early health care interventions and the role of NGO's in providing moral and psychological supports to the affected people; Colbourne (2005) explored the impact of the tsunami on physical and land use; and Abdullah et.al (2005) focused on the tsunami's impact on environment, irrigation systems and on government agencies' response in general. To complement and expand these studies, I conducted a mixed method study combining quantitative (semi-structured questionnaire, 50 respondents) and qualitative (semi-structured open-ended interview questions with 7 interviewees) during a 10 week fieldwork trip (July – September 2014) in Penang and Putrajaya.

The purpose was to obtain information regarding the reactions of tsunami affected people to the government's response. The intention was to investigate the extent of the tsunami's impact on government's disaster management structures, machinery, procedures and local electoral politics and specifically whether the affected people change their voting from supporting the ruling to the opposition party because of dissatisfaction with the tsunami rehabilitation programmes, through a comparison of the 2004 general elections (before the tsunami) and 2008 (after the tsunami). Studies by researchers such as Ming (2008), Case (2010), Chin and Huat (2009), Ghazali (2009) have not indicate that the tsunami had the hypothesised effect because their studies focus on other factors that contributes to the changes in voters preference in 2008 due to socio-economy (cost of living, housing price and fuel price), the former Deputy Prime Minister's Mr. Anwar's charismatic

(now a Chairman of Opposition Alliance) factor and internal conflict of the ruling party coalition 'Barisan Nasional' (National Alliance) between UMNO and MCA, in which the MCA disagrees with UMNO plays the racial card during the election campaign. Hence, my studies explores the effect of tsunami as another potential factor influencing voters in 2008 election.

In response to the tsunami, a technical and financial team from NSC assessed and evaluated property damage (particularly houses) and put recommendations to the Disaster Committee for house rebuilding and renovation, as well as house relocation programmes (Rumah Tsunami). Another technical team from Ministry of Agriculture evaluated the extent of the damage to fishermen's boats and equipment. Based on the evaluations and recommendations from the NSC and the Ministry of Agriculture, the Disaster Committee decided to implement short, medium and long term response and recovery programmes. Short term programmes were Bantuan Wang Ehsan (Monetary Aid), of RM500 to RM1000 (approximately £90m to £181m), and House Repair; the medium term programmes were the Tsunami Transit House and, Agricultural and Fishery Assistance Programmes. The long term programmes were Rumah Tsunami (permanent housing relocation programmes), The recovery programmes focused on monetary aid and housing repair assistance in an effort to rehabilitate affected people, for which the government established a trust fund, Kumpulan Wang Amanah Bantuan Bencana Negara-KWABBN (the National Disaster Relief Trust Fund).

Bantuan Wang Ehsan (Monetary Aid)

KWABBN was set up by Ministry of Finance but managed by the Disaster Management Division of the National Security Council with one of its main objectives being to give immediate monetary support as compassionate aid (not compensation), ranging from RM500 to RM1000 (equivalent to £90m to £181m) to affected people, whose houses suffered minor or major damaged and RM20,000 (£3,636) per family, who suffered a loss of any family member, as quickly as possible, to the recipients (Table 4.2). It is better known as 'Wang Ehsan' and help is normally given in the temporary shelters and so is immediate post-disaster aid. At the federal level, the government, via the National Security Council (NSC), formed the Tabung Wang Amanah

Bantuan Bencana Negara-KWABBN' (the National Disaster Management and Relief Trust Fund) but due to a lack of confidence in KWABBN because of perceptions of the mismanagement of funds, donors handed aid directly to NGO's such as Mercy Malaysia or the Red Cross/Crescent, and other religious organisations. Table 4.2 provides the categories of Wang Ehsan's activities.

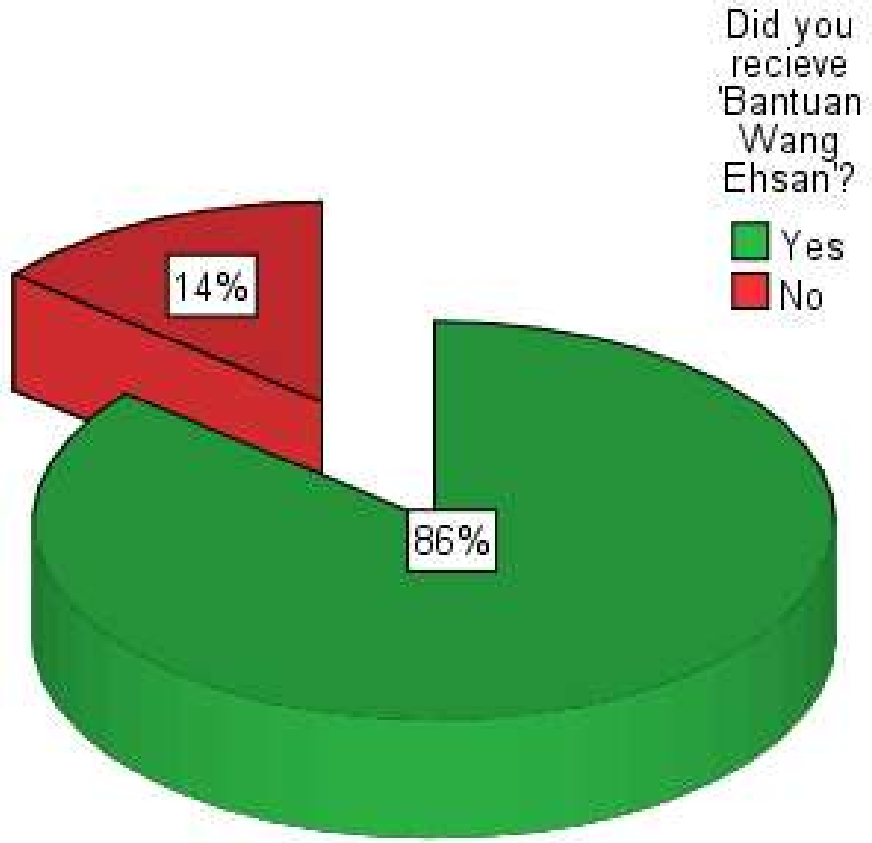
Table 4.2: Category of 'Bantuan Ehsan' Disbursements

Category of 'Bantuan Ehsan'	**Total Recipient**	**Total Cost (RM)**
Death of Family Members (68 in Malaysia & 6 oversea)	74 people	RM 74,000.00
Death compensation	76 people	RM 1,520,000.00
Injury (warded)	116 people	RM 23,200.00
Relocation	2,876 families	RM 1,425,100.00
Fishermen Loss of Income	3,987 families	RM 1,989,700.00
House severely damaged (cannot be repaired)	133 houses	RM 665,000.00
House damage (can be repaired)	751 houses	RM 1,498,000.00
Large boats (outside engine)	547 houses	RM 1,641,000.00
Small boats (inside engine)	3,129 houses	RM 3,128,420.00
Shellfish breeders	39 people	RM 19,500.00
Fish breeders	194 people	RM 302,200.00
Aquaculture entrepreneurs	129 people	RM 64,500.00
Home appliances damage (minor)	552 houses	RM 552,000.00
Home appliances damage (major)	512 houses	RM 1,030,000.00
Missing person	5 people	RM 100,000.00

Source: Kamarudin (2010).

However, there were allegations of mismanagement of Bantuan Ehsan during the dissemination process (particularly over the donation of food and clothing by various organisations), which were not received by the evacuees at temporary shelters, due to lack of monitoring (Gan, 2005). These sentiments were the reason for dissatisfaction and in my sample, of 86% recipients of 'Wang Ehsan (Figure 4.1),

Figure 4.1: Percentage of 'Wang Ehsan' Recipients



26% of them were not satisfied with the amount of (Figure 4.2), 91% claimed the amount was insufficient and 9% believed that it had not been fairly distributed (Figure 4.3).

Figure 4.2: Percentage of Satisfaction on 'Wang Ehsan'

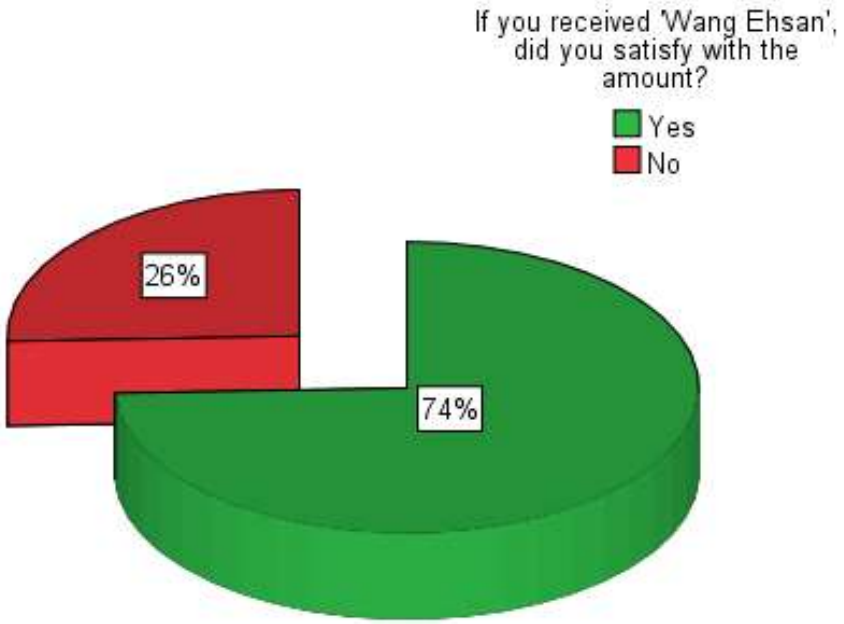
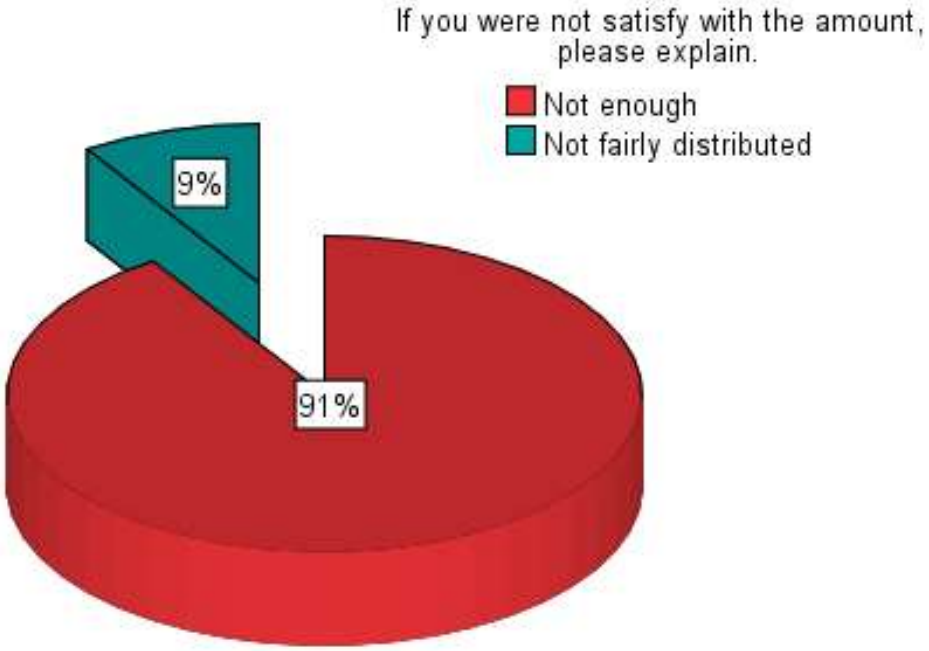


Figure 4.3: Reason of Dissatisfaction on distribution of 'Wang Ehsan'



In terms of recipients by ethnic group, a majority who did not receive it were Indian (76%) (Figure 4.4), and this contributed directly to the Indian voter retaliation against the Barisan Nasional in the 2008 election when 78% voted for opposition Pakatan Rakyat (PR), compared to only 22% for the PR in the 2004 election[5]. 78% out of 26% respondents who were not satisfied was the lowest income group (below poverty line) (Figure 4.5); 88% claimed the amount was insufficient, and 12% believed it was unfairly distributed (Figure 4.6). Another issue was that aid was distributed late even though many tsunami relief funds (such as The Star/Maybank Tsunami Relief Fund) had been created by January 1, 2005 (only 6 days after the tsunami) and had collected RM567,304.26 (£103,146.23) in donations from the Malaysian

[5] This claim was corroborated by Dr. Hilmi Yahya (former Deputy Chief Minister of Penang during the 2004 tsunami) in an interview on 17th July 2014 and Faridah Arshad (former State Assembly Representative of Teluk Bahang in an interview on 21st July 2014.

Figure 4.4: Recipient of 'Wang Ehsan' by Ethnic

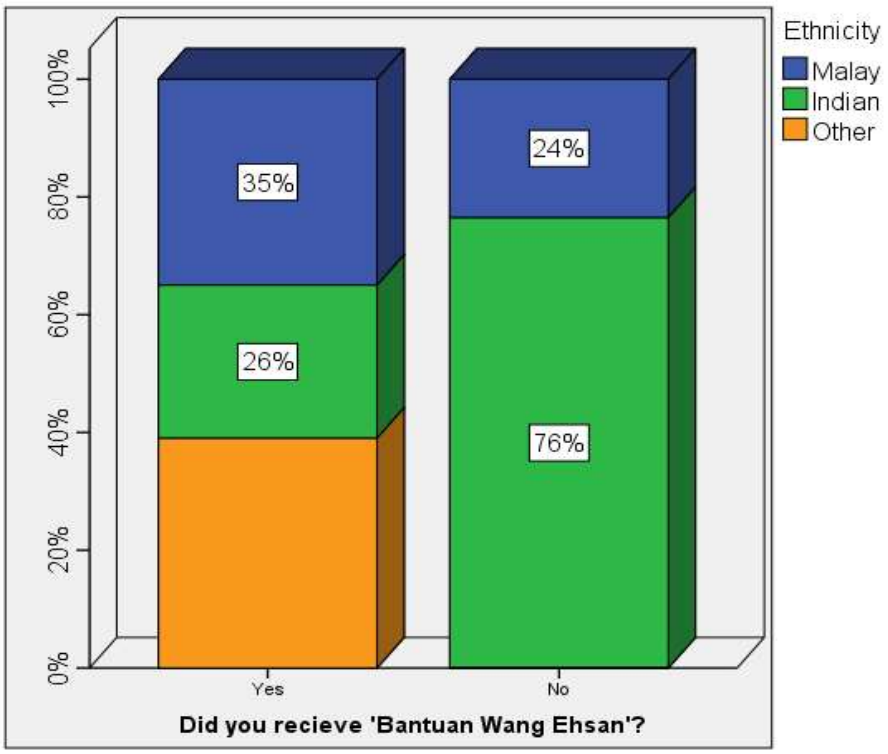


Figure 4.5: Satisfaction Level on 'Wang Ehsan' by Income

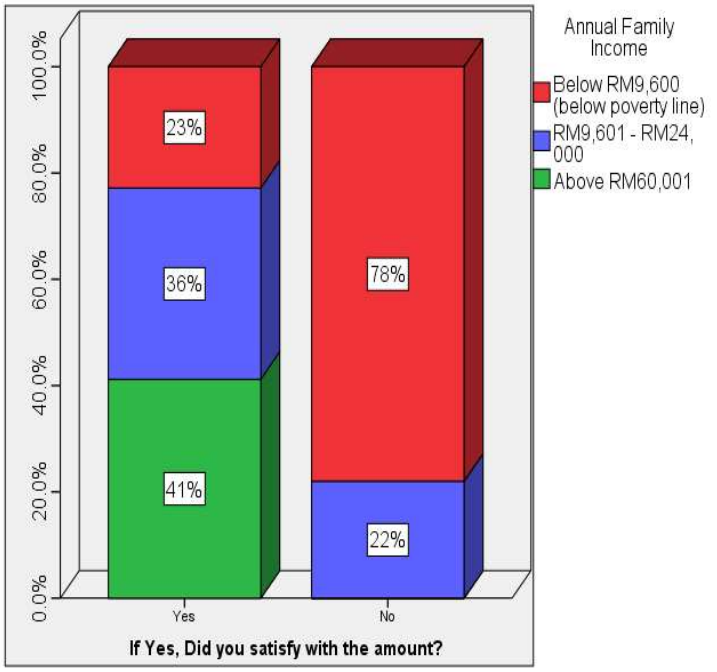
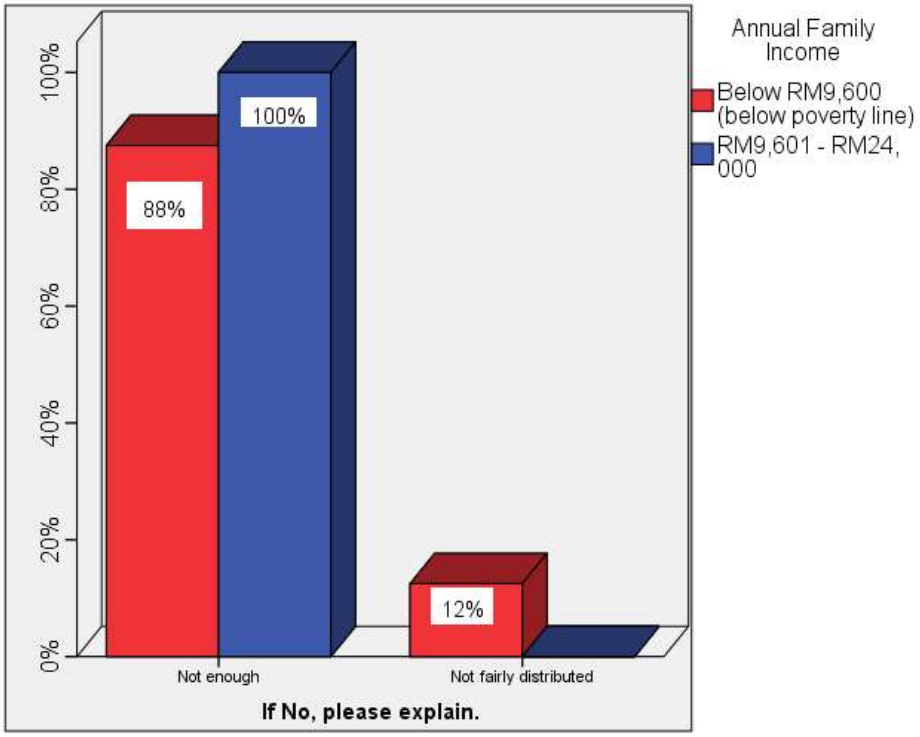


Figure 4.6: Satisfaction on 'Wang Ehsan' by Income



public, private companies and NGO's. Another fund, 'Tabung Bencana Alam Tsunami', organised by Melaka State, reached RM750,000 (£136,364) donations (Malaysiakini, 2005). Donations from both had still not been delivered to the tsunami affected people over a week after tsunami. The dissatisfaction with the late distribution of monetary aid (Wang Ehsan) was corroborated by the Secretary of NSC (interview on 7th August 2014), who stated that the affected people were questioning why the donation money from the public and private sectors was not distributed and questioning where the money went to, because they knew a substantial amount of money was donated by the public but they had not seen how it was used to ease their burden. The then Prime Minister Abdullah who visited the incident areas on the second day (27th December 2004), was giving away money from his personal resources to the population, amounting RM1,000 (£181) to RM2,000 (£383) for each family. Bureaucracy was identified as stumbling block in distributing donations because the secretariat at the temporary shelters (from the Welfare Department) had to wait for politicians from the ruling party to officially deliver them to the affected people.[6] As was normal practice, this also involved the delivery of a political message as this aid was delivered by the party, which it used to appeal for support. In contrast, the opposition leader, Anwar Ibrahim was allegedly denied access to the shelter at Kuala Muda. This reflects the political bias in giving access to the politician to meet evacuees and thereby be identified with the delivery of aid (Gan, 2005).

Further investigation on distribution revealed that 'red tape' was blamed for the late delivery because the main problem was validating the list of tsunami affected people. Several lists were produced by different groups (political parties, NGO's government agencies), even though the main agency responsible for producing validated list was the District Office, as stipulated in NSC Directive No. 20. Consequently, the District Office was facing problems of competing claims from different parties and organisations who insisted their list was the most reliable, claims that often lead to disputes among them. There were also false claims cases and confusing claims, as revealed by the

[6]As revealed by Assistant Secretary of Disaster Management of National Security Council (NSC) Penang Office on 17th June 2014 and corroborated by Principle Assistant Secretary of Disaster Management Division of NSC HQ Putrajaya in an interview on 5th August 2014.

then Deputy Secretary NSC, such as between landlord or tenants, duplicating claims such as the whole family submitted claims for the entire family, despite by right only one claim for each family. Despite a high level of concern about the management of donations from the public, the government insisted that KWABN was managed with accountability and transparency. For example, it underwent a thorough audit by the Auditor General's Office and this report was presented to parliament in January 2005. KWABN was established according to the provision in Section 10 of Financial Procedure Act 1957 (Revised 1972) and the details of KWABN transactions were tabled in Dewan Rakyat (the equivalent to House of Commons) by the then Deputy Prime Minister Najib Razak on 17th January 2005 and accepted by the Members of Parliament (Parliament of Malaysia, 2005). Consequently, public confidence in KWABBN appeared restored. Other short term programme included the House Repair programme; aimed at repairing lightly damaged houses. Table 4.5 shows 251 unit houses were repaired in Penang by district: Northeast District (126), Southwest District (109) and North Seberang Prai District (16).

In terms of the 'Wang Ehsan', a substantial minority (32%) proposed an increase in the amount of disaster relief money, 6% stated that the assistance was not biased towards certain groups, ethnic or cronies, and 6% demanded long term assistance from the government. Only 30% were satisfied with the current situation and 32% gave 'no comment' (Figure 4.7).[7] With regards to Rumah Tsunami, only 48% were satisfied and 62% offered various comments, such as needing greater speed in allocation (6%), including business premises , and 22% gave 'no comment' (Figure 4.8). As for the fisheries and agricultural assistance, a majority (56%) were reluctant to give any comments, but 8% suggested an increase in the amount of assistance to fully cover the cost of repairing or replacing boats and equipment, and 6% indicated the importance of impartiality and not biased to ethnic groups (three Malay respondents claimed that Chinese entrepreneurs received more financial assistance than Malay fishermen). Only 26% were satisfied with the current situation (Figure 4.9).

[7] From my observation during the questionnaire sampling, the respondents who stated "no comment" are either shy, doubtful of my intention, in a hurry or reserve their comment.

Figure 4.7: Suggestions to Improve Distribution of 'Wang Ehsan'

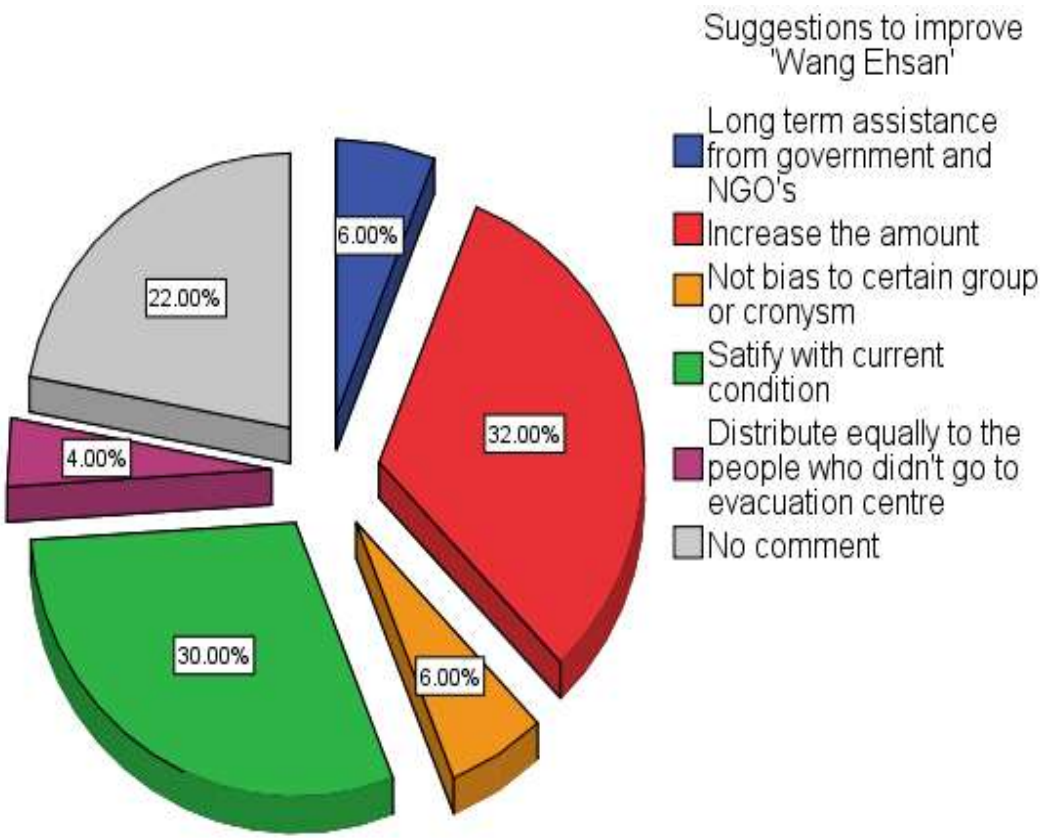


Figure 4.8: Suggestions to Improve ‘Rumah Tsunami’

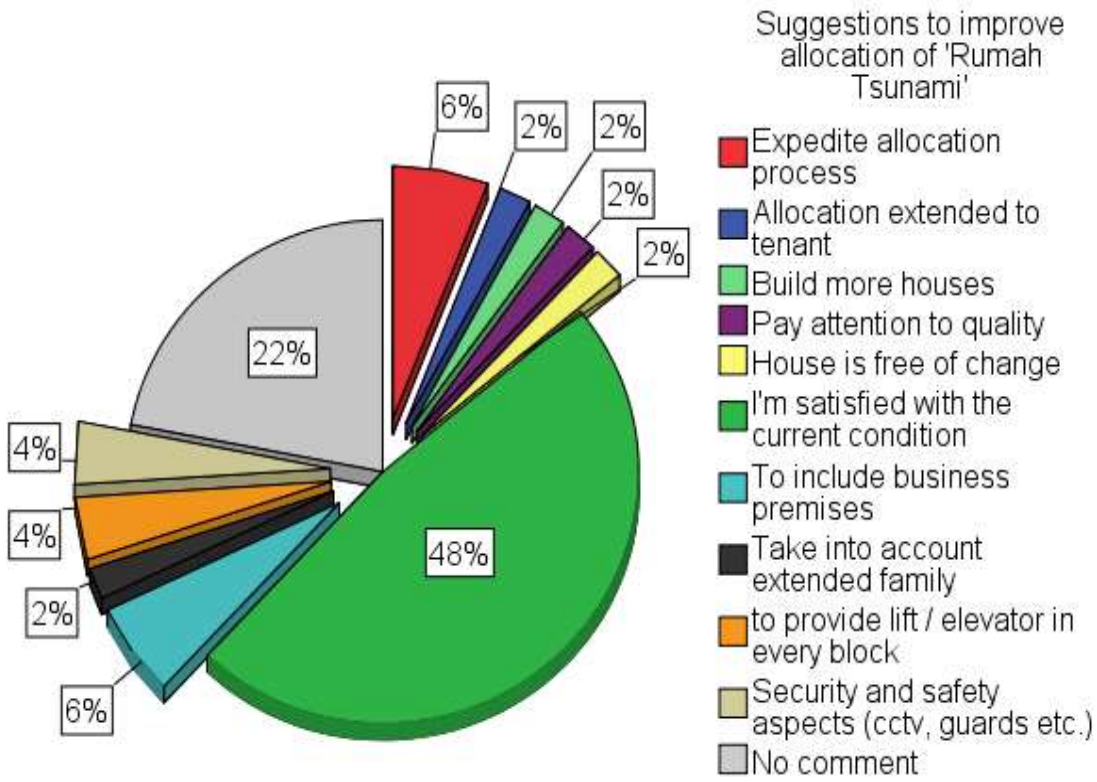
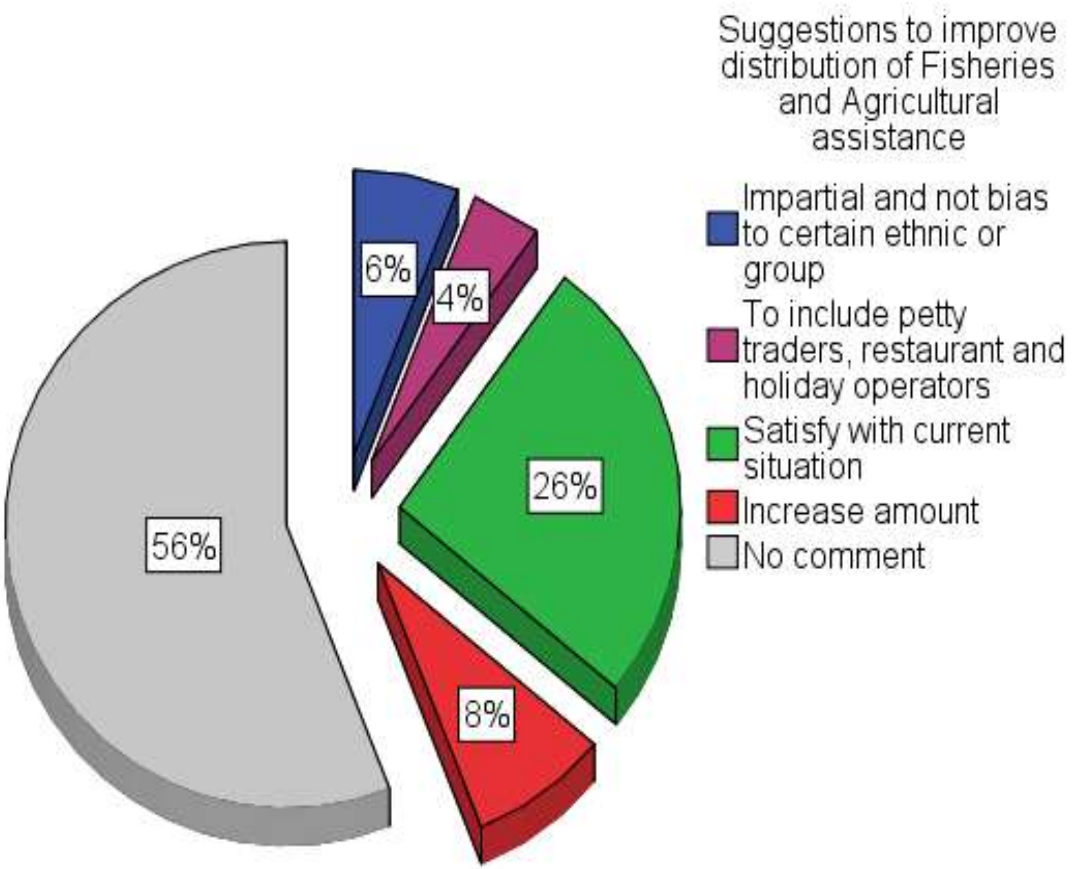


Figure 4.9: Suggestions to Improve Fisheries and Agricultural Assistance



Fishery and Agricultural Assistance

Fishing communities were amongst the hardest hit by the tsunami which swept away boats, jetties and fishing equipment. Lembaga Kemajuan Ikan Malaysia-LKIM (the Fisheries Development Authority of Malaysia) estimated that 1,430 boats were damaged. According to the NSC, 1,333 fishermen received RM 1,000 (£181) in financial assistance for repairing their boats and 97 received RM 3,000 (£545) to buy new boats (Kamarudin, 2010). However, Horton et.al (2008) argue that fishermen claimed to receive amounts less than those reported by NSC, one fisherman claimed to have received RM 2,000 (£363) and not RM 3,000 (£545) for his destroyed boat. The Chairman of the Fishermens' Association in Sungai Burong (Barat Daya District) claimed that the association distributed RM 1,000 (£181) to each of its members regardless of boats amounted to RM 5,000 (£909) or RM 6,000 (£1,090). LKIM also offered mechanics to repair boats and engines but some fishermen claimed repairs were not done properly, they still had to pay more than expected and took a longer time (up to four months) to resume fishing, which seriously affected their livelihoods (Horton et al., 2008).These were aggravated by a shortage of financial assistance.

Fishermen had to apply for loans from LKIM of about RM10,000 (£1,818), with a repayment period 5 to 6 years, in order to fully cover the cost of repairing boats and engines. Horton et.al (2008), corroborated by mass media reports contended that few affected fishermen claimed they had not received any assistance from government, while others claimed the aid was distributed very late. One stated he waited for six months for a government loan of about $6,000 (RM 91,800 or £3,600) to buy new boat and fishing equipment (Kent, 2005). Another pointed out that government broke its promise by offering a loan ranging from $250 (RM 825 or £150) to $800 (RM 2,640 or £480) as compared to earlier promise of $6,500 (RM 21,450 or £3,900) and $18,000 (RM 63,000 or £11,454) to replace wooden or fibreglass boats respectively (Kent, 2005). These claims were corroborated by my sample. Of the 68% who received fisheries and agricultural assistance (Figure 4.10), 25% were not satisfied because the amount was insufficient (Figure 4.11). A majority of respondents (72%) who had not received assistance, claimed that they did

Figure 4.10: Percentage of Recipient of Fisheries and Agricultural Assistance

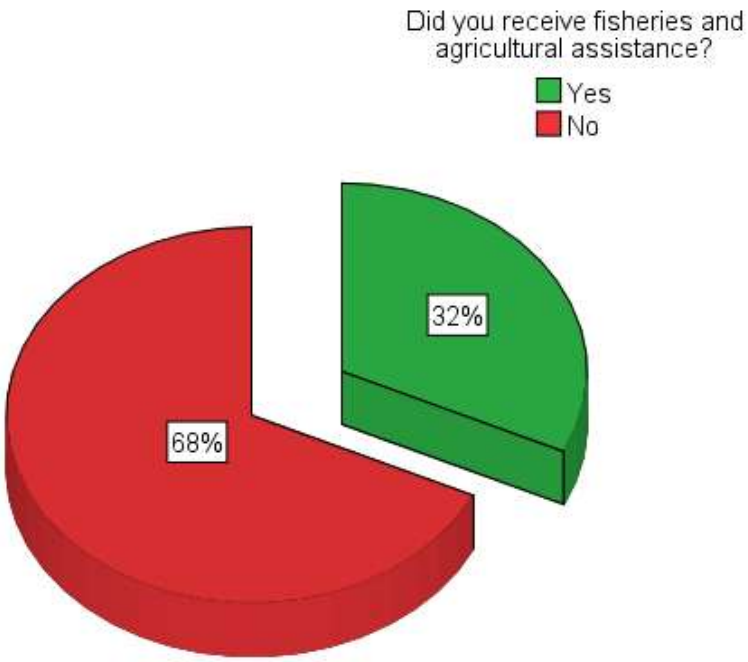
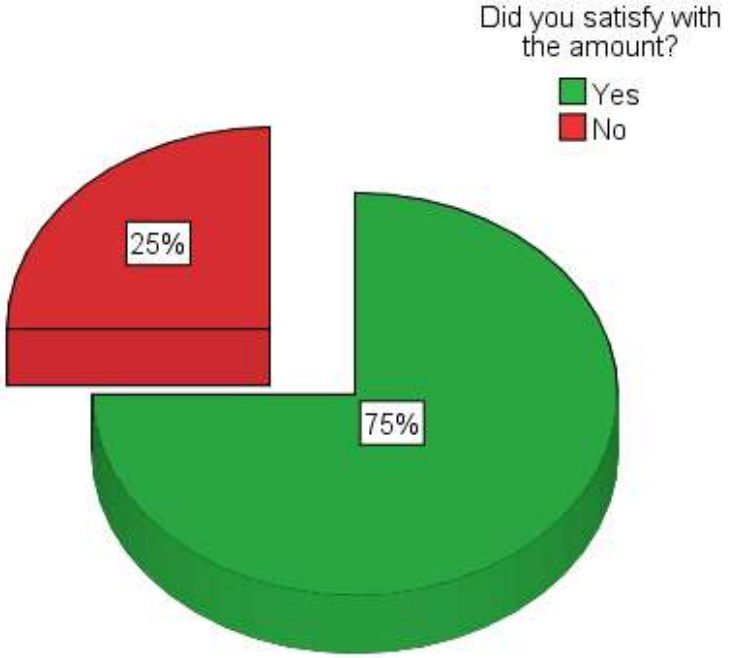
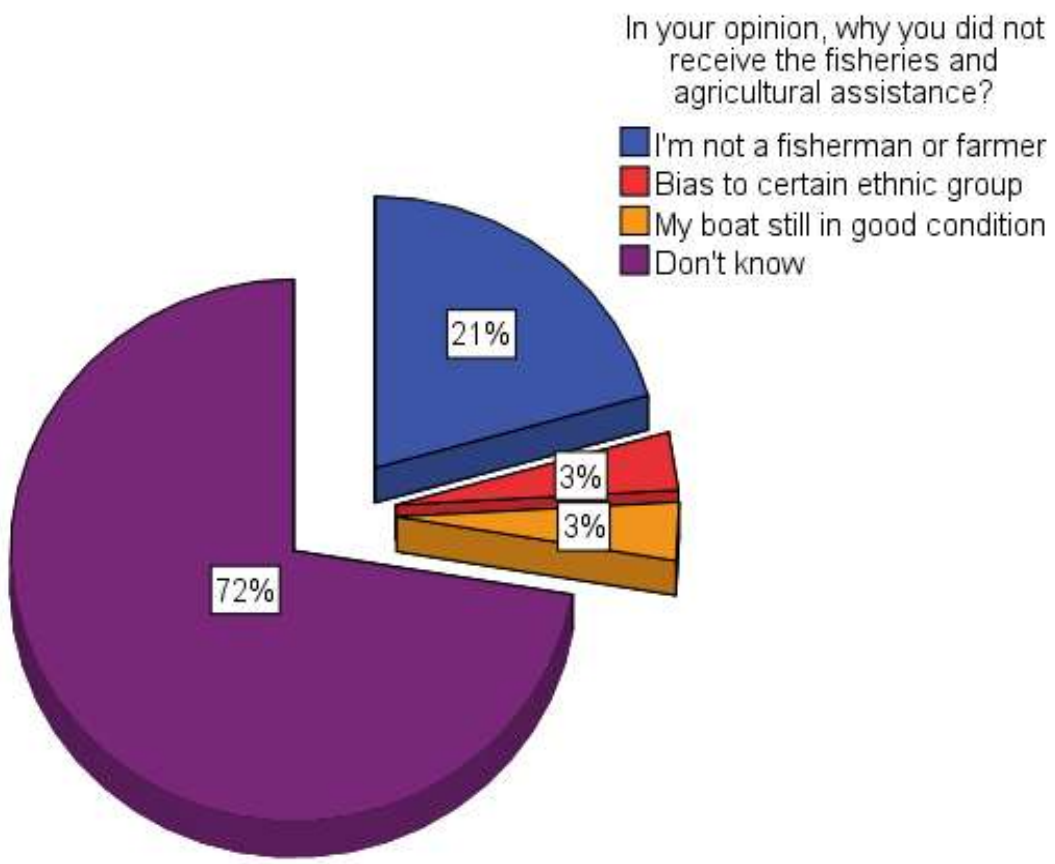


Figure 4.11: Satisfaction on Fisheries and Agricultural Assistance



not know the reason why their names had been overlooked by the government agencies, in this case LKIM (Figure 4. 12).

Figure 4.12: Reason Perceived by Respondent Who Did Not Received Fisheries and Agricultural Assistance



These discontents were the result of organisational inefficiency, which stimulated further resentment and opposition. The delay, from my experience as a government official, is due to bureaucracy and 'red tape' that hampered government's objective of easing the burden of the affected people as quickly as possible. This then raised public anger and frustration, which resulted in two hundred people sending a petition setting out their dissatisfaction on the

management of the tsunami rehabilitation programmes to the Penang State government. However, the petition was rejected by the government on the grounds that many of the claimants had received assistance (see Table 4.3) for loss of

Table 4.3: Assistance from Ministry of Agriculture and SPNB
(National Housing Company Limited- a subsidiary of Ministry of Finance)

Details	**Unit**	**Total (RM)**
Ministry of Agriculture		
Farmers/fishermen who lost source of income	189 people	94,500.00
Repairs and purchase of new boatengines, boats and trawls.	2,881 units	11,407,316.96
SPNB (National Housing Company Limited- a subsidiary of Ministry of Finance)		
Repairs of damaged houses	450 units	1,921,038.00
Building of temporary houses	245 units	4,524,608.00
Building of permanent houses	727 units	65,187,642.00

Source: Kamarudin (2010).

income, for repairs, and for the purchase of new boat, engines, and trawls), and not to mention cases of false claims (Gan, 2005). Many fishermen resorted to personal loans from other sources, such as family, relatives, bank and loan sharks (with a far higher interest rate). This financial burden due to loss of income and repayment of loans undoubtedly created dissatisfaction and frustration amongst tsunami affected fishermen. Meanwhile, a few affected farmers, whose paddy fields had been destroyed by the sea water

received monetary assistance from Ministry of Agriculture without any issues raised.

The impact of the tsunami on business can be divided into two categories: first, international hotels; and second, small local businesses (such as restaurants, tourist souvenir shops and aquaculture entrepreneurs). While international hotels on the beaches were not affected significantly by the tsunami due to their concrete construction. Hotel residents were spared because hotels owners and staffs manage to convey tsunami threat after receiving an early warning by telephone and fax from their counterparts in hotels in Langkawi. Meanwhile, small local businesses suffered significant damage and losses because of wooden-made stalls and restaurants. For example, one oyster farmer claimed that he lost of income because 150,000 oysters (estimated RM20,000 or £3,636 loss) washed away and he was unable to take precautions because he received no early warning) and it took him four months to recover.

These small local businesses were overlooked by the government in the early stages of the response and only received RM1000 (£181) of financial assistant 'Wang Ehsan' after two months of tsunami (Horton et al 2008). This was corroborated by the former Deputy Secretary of NSC (the then Director of Disaster Management Division during the tsunami), in an interview on 7th August 2014, that the government only offered assistance to small business owners in 2006 (two years after the tsunami) in the form of interest-free bank loans. A restaurant owner in Batu Ferringhi interviewed during fieldwork on 16th July 2014, noted that he received no compensation from the government (federal or state) and only obtained RM2,000 (£363) financial assistance from NGO's. Horton et.al (2008) identified the same situation in Tanjung Tokong, where restaurant operators received minimal financial assistance from the government (RM200 or £36 through Welfare Department) and NGO (RM100 from Penang Foundation). One restaurant owner claimed that although state government provided her with building materials to rebuild her restaurants, this was insufficient and had to top up the official aid with RM 60,000 (£10,909) from her savings and through loans. This perceived discrimination between business owners and fishermen created anger,

frustration and dissatisfaction among local small business operators towards government's response and recovery programmes.

Rumah Tsunami (Tsunami Housing Resettlement Programme)

A major focus of the Disaster Management Committee in the recovery phase was the relocation of vulnerable communities, particularly in Tanjung Bungah, Batu Ferringhi and Teluk Bahang. While waiting for the completion of the permanent houses, tsunami affected people were relocated to 100 units of houses that were built at a total cost of RM 1,226,369 (£222,976) in Batu Ferringhi and Pantai Miami in the northeast of Penang island (National Security Council Penang Office, 2005). Table 4.4 indicates 126 houses were repaired in Timur Laut District (Northeast District) which contains the worst stricken areas in Tanjung Bungah and Batu Ferringhi.

Table 4.4 Houses Repaired in Penang by District

DISTRICT	**UNIT**
TIMUR LAUT (Northeast District)	126
BARAT DAYA (Southwest District)	109
SEBERANG PRAI UTARA (North Seberang Prai District)	16
TOTAL	251

Source: (Kamarudin, 2010)

The transit houses were planned to be built in hilly areas in Tanjung Bungahwith 100 units and during the construction of the transit houses displaced persons were to live in temporary shelters that many of claimed were of poor quality because of cheap building materials such as plywood for the walls, and lacked security.[8]People in temporary shelters were frustrated

[8] Interview with three influencers; the former Deputy Chief Minister of Penang, the former State Representative of Teluk Bahang Constituency, and, the Youth Chief of PERKASA (a Malay NGO's).

by the slow progress of permanent house building, which had not started six months after the tsunami (Gan, 2005). Complaints over the speed of response are common one in disaster management so the discontent might reasonably have been foreseen by the government.

Many thought that the temporary house, with two bedrooms, one living room, a kitchen and one bathroom, was inadequate compared to the houses that were damaged or destroyed. Several people were so dissatisfied with the size and condition of the temporary houses they decided not to leave their existing houses (Horton et al., 2008). This claim was supported by my sample, in which 30% indicated that their new house was too small and could not accommodate an extended family, and its quality was poor. However, according to the National Security Council Penang Office, temporary houses were deliberately designed with basic facilities by the Federal Government as temporary shelters while waiting for the construction of permanent relocation housing to be completed. According to the NSC (Kamarudin, 2010) 133 houses that were severely damage could not be repaired, 751 houses could be repaired. As only 100 houses were built in contrast to 251 damaged in Penang, resulting a housing shortage. Horton et.al (2008) suggests that the remaining 151 damaged house residents moved to relatives' houses. However, the NSC explained that 100 were built for those living in severely damaged houses and subsequently 561 permanent houses were built in Penang to provide for all the tsunami affected people. Furthermore, 100 units were built at Pangsapuri Masjid Terapung, Tanjung Bungah, and 461 at Kuala Muda, Seberang Perai (Table 4.5). Permanent houses in Tanjung Bungah were built to modern designs and with facilities and amenities such as mosques, parks, playgrounds, and taking into account security issues by providing 7 feet fencing surrounding the compound and tidal wave break walls (Figure 4.13).

Table 4.5: Tsunami Permanent House Development in Penang

LOCATION	**UNIT**
TAMAN PERMATANG KATONG, KOTA KUALA MUDA, KEDAH	126
TAMAN ARA JAYA, KUALA TRIANG, LANGKAWI, KEDAH	40
PANGSAPURI MASJID TERAPUNG, BANDAR TG. BUNGAH, PULAU PINANG	100
KUALA MUDA, SEBERANG PERAI, PULAU PINANG	461
TOTAL	727

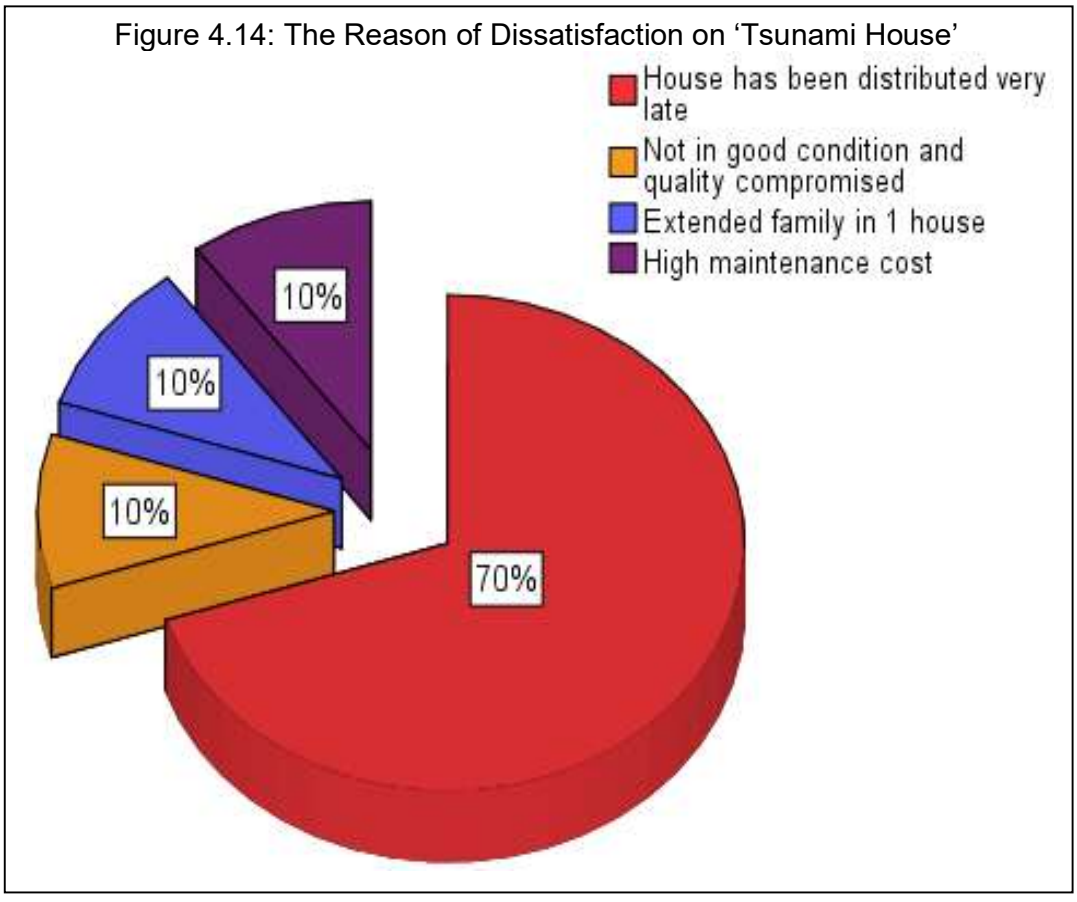
Source: Kamarudin (2010).

Figure 4.13: Layout Plan of ‘Tsunami House’ in Tanjung Bungah, Penang Island.

Source: Kamarudin (2010)

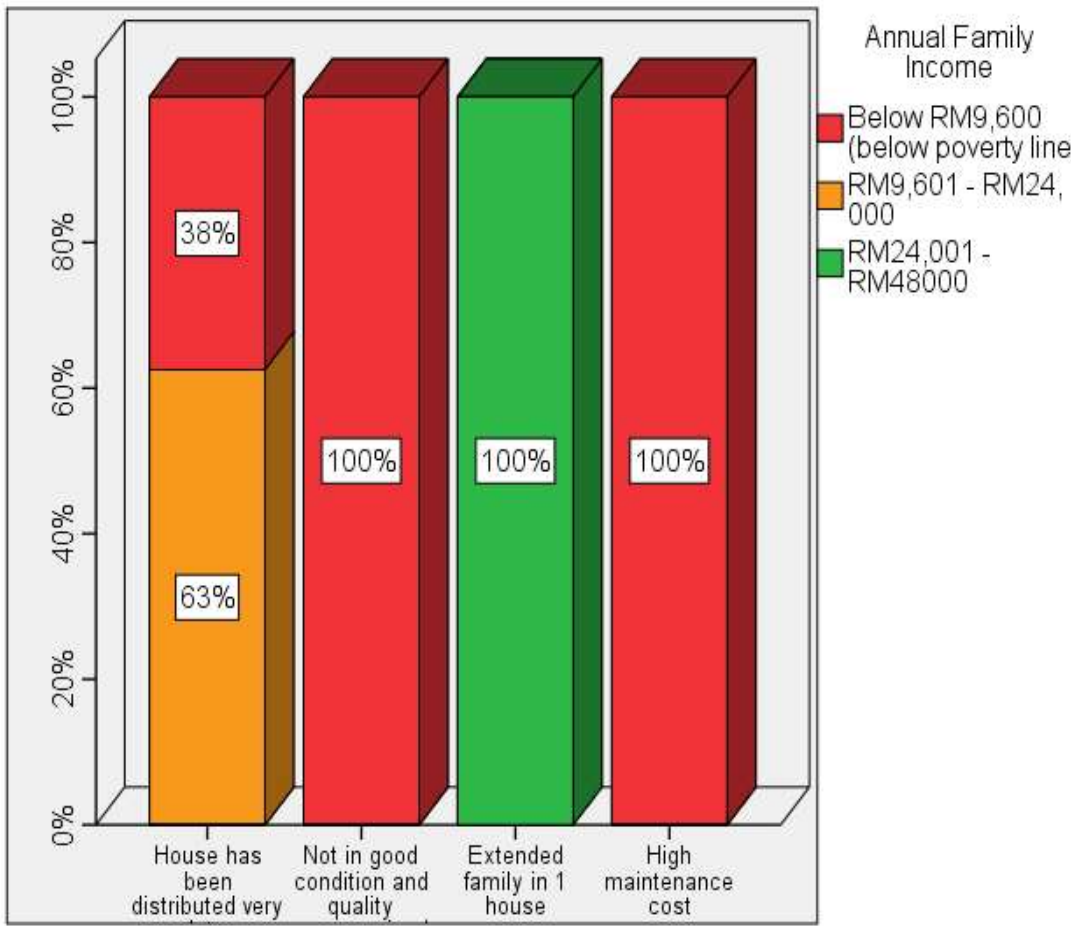
Horton et.al (2008) argues that the amount of compensation received by 521 owners of damaged houses was not standardised: 323 of them received less than RM2,000 (£363) and 198 more than RM2,000 (£363). The Welfare Department argued the amount varied depending on the extent of a house's structural damage and did not include furniture and appliances. The NSC stressed this was compassionate aid, not full compensation. Consequently, house owners resorted to extra financial assistance from family, relatives and friends for renovation and rebuilding their houses. My sample shows that 94% received 'Rumah Tsunami' and 68% of them were satisfied. Another 32% (all of them Malays. See Figure 4.14) expressed dissatisfaction with 'Rumah tsunami' for various reasons. For instance, 70% of them were dissatisfied by delays (ranging from one to two years) in the distribution of permanent housing and 20% were unhappy with the low quality of the houses that led to high maintenance cost and extra burdens on the household.

Figure 4.14: The Reason of Dissatisfaction on 'Tsunami House'



In terms of allocation of the houses, 20% believed the houses were allocated improperly, such as to people whose houses were not severely damaged or destroyed. Further investigation revealed that all of the 20% respondents' perceptions were based on rumours and hearsay. In terms of dissatisfaction by income group, the low income groups (below the poverty line) saw high maintenance costs and poor build quality as the main reasons for dissatisfaction (Figure 4.15).

Figure 4.15: Dissatisfaction on 'Rumah Tsunami' by Income



A majority of the middle income group (RM9,601-RM24,000/year or £1,745-£4,363/year) stressed the late distribution of the houses (63%) and all high income respondents (above RM24,000/year or £4,363/year) expressed

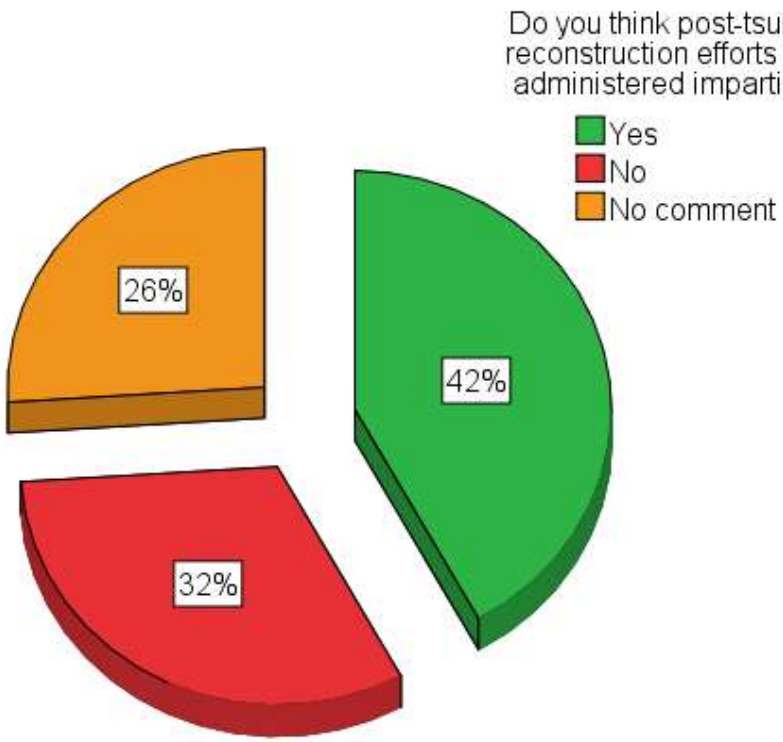
concern about house size. Interviews with Secretary and former Deputy Secretary of NSC revealed that there was an issue of affected people who were reluctant to pay for the house although the Federal Government subsidised a considerable amount from RM52,000 (£9,454) to only RM18,000 (£3,273) with monthly a nominal monthly payment of RM50 (£9) per month. The reason they did not want to pay was because they were unfortunately hit by the tsunami, therefore the government should replace their damaged house that they have been living before tsunami for free. They also perceived that the government should use the donation money from the National Disaster Relief Trust Fund (-KWABBN) to cover the cost of building the houses. However, the former Deputy Secretary of NSC argues that the amount of the KWABBN was not enough to build the houses because the land cost (over RM1 million / £181,818) for development was significantly higher than the building cost, and the donation money also was planning to be distributed for other assistance, such as for fisheries. Some of the claims were genuine from the lower income group and vulnerable people such as disable or older people, that the government decided to give them free houses. Another issue was false claims by applicants who submitted more than one application for the whole family members, but the government policy was one house per family only.

Perception of Bias in the Distribution of Government Assistance

This section discusses the perception of bias in tsunami reconstruction programmes by occupation, education level, ethnic group and income level. It then explores the reasons put forward to account for this bias by the affected population.

Figure 4.16 shows 42% of respondents believed the tsunami reconstruction programmes were administered impartially, but a substantial minority, 32%,

Figure 4.16: Perception on Tsunami Reconstruction Programmes



believed that there was discrimination in the programmes: a majority of this group (58%) were unemployed, and 26% gave 'no comment' In terms of education, all who perceived bias were secondary school leavers, whereas those with a primary education gave 'no comment'. Perception of bias by ethnic group was dominated by Malays with 69% (Figure 4.17) whilst a majority of Indians (66%) answered the question with 'no comment'. In terms of occupation, a majority (56%) who perceived bias were unemployed and 58% of government employees answered 'no comment' (Figure 4.18). This implies that a substantial number of respondents perceived the government's response was flawed by discrimination but were extremely reluctant to state whether or not they believed bias was a factor in the operation of the programmes. From my observation and experience, the high percentage of respondent who stated "no comment" is due to several reason such as shy,

Figure 4.17: Perception on Biasness in Post-Tsunami Reconstruction by Ethnic

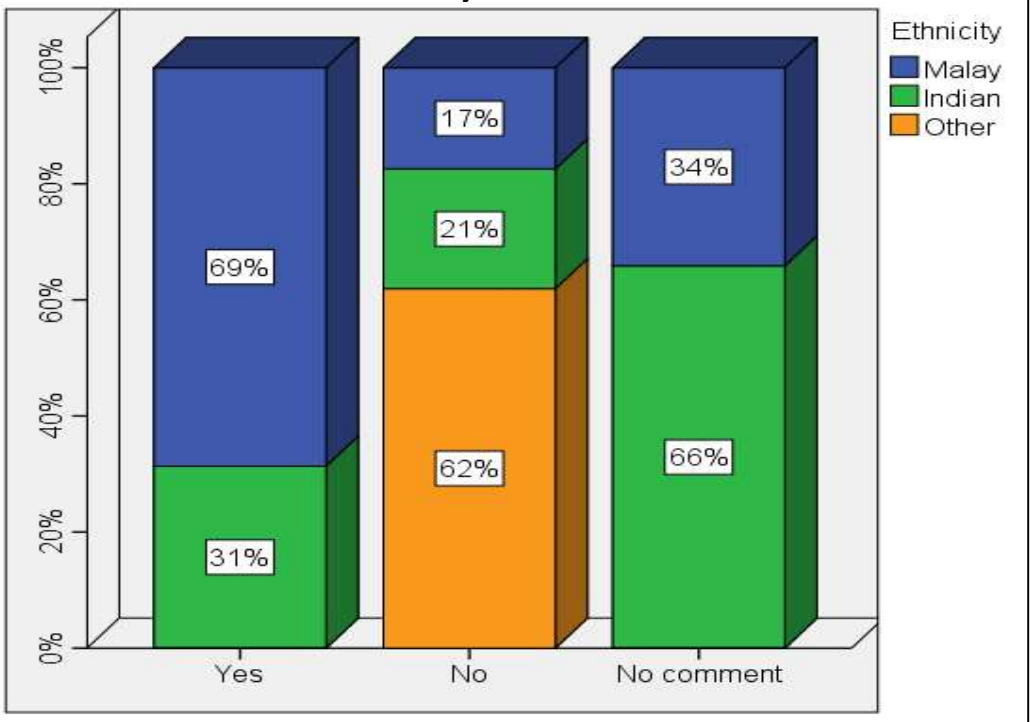
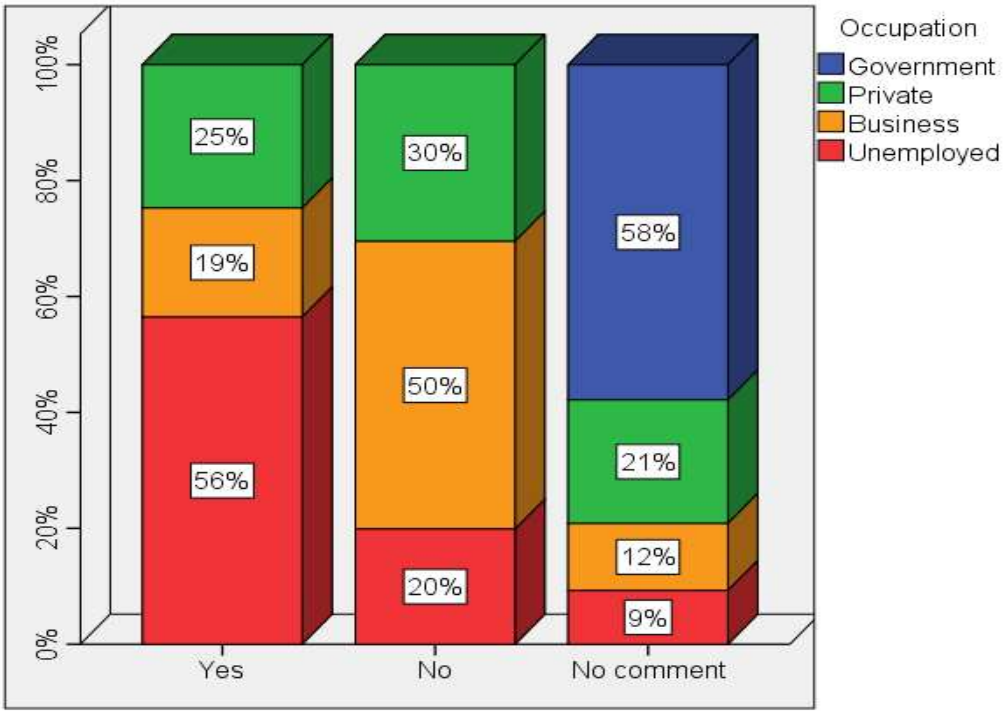


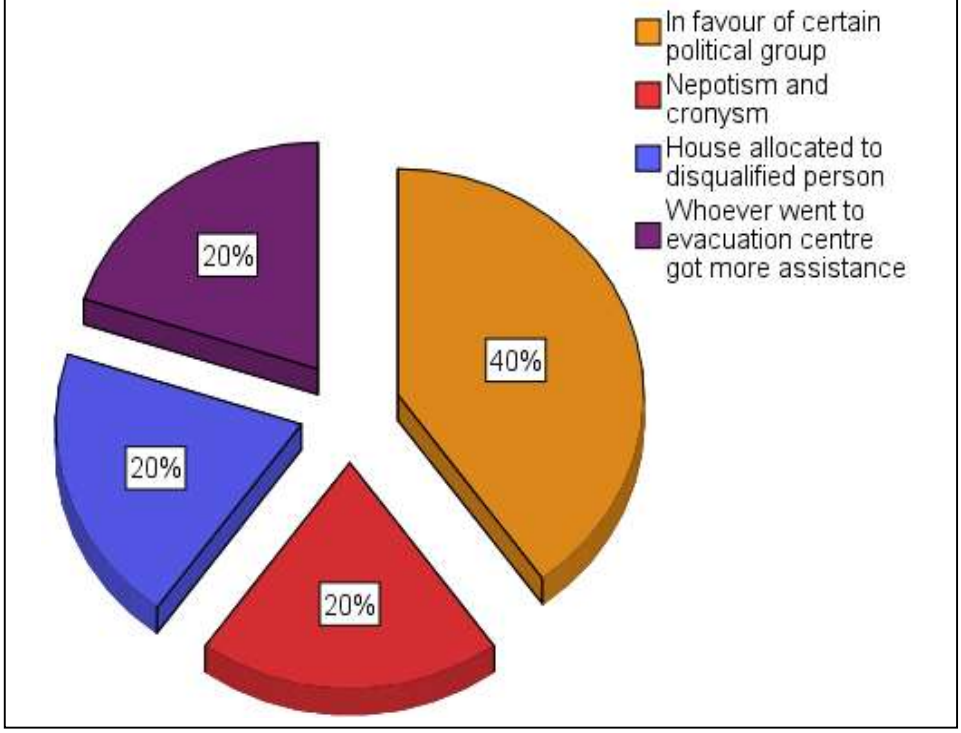
Figure 4.18: Perception of Bias in Post-Tsunami Reconstruction by Occupation



reserve their comment, afraid of being labelled as government's opponents, doubtful of my intention and in a hurry or busy doing their chores.

Figure 4.19 shows that 40% of the sample believed the programmes favoured

Figure 4.19: Reason for Bias in Post-tsunami ReconstructionProgrammes



certain political groups, and 20% claimed nepotism and cronyism influenced the distribution of aid (particularly financial assistance and the allocation of 'tsunami houses'). Another 20% of respondents were not satisfied regarding the perceived different treatment by government agencies of affected people particularly those who did not go to the evacuation centres and so received less aid than people who moved there. Analysis shows that all ethnic Malays believed mismanagement accounted for the maldistribution of tsunami housing and the allocation of monetary aid, whilst all ethnic Indians (out of 20%) blamed cronyism and favoritism, in which priority was given to delivering disaster assistance to families, friends and relatives. In terms of income group, all below the poverty line group (family income less than RM9,600 per year) out of 20% believed that the post-tsunami programmes were not fairly

managed, particularly regarding to distribution of monetary aid between those who went to the evacuation centres and those who went to family and relatives. 67% (out of 40%) of low income groups (RM9,000 to RM24,000 per year) believed that disaster aid was prioritised for certain political groupings. This sparked serious anger among people who preferred to move into a relative's house. However, it can be argued that it was difficult for disaster management agencies to figure out the scale and scope of assistance needed by people who did not move to the temporary shelter (or evacuation centres) because of a lack of information as compared to in evacuation centres which were coordinated by Social Welfare Department, where every affected person was registered on a database for the distribution of aid.

There clearly existed widespread dissatisfaction with the government's relief programmes. The data revealed that the discontent was concentrated on the mismanagement of funds, the 'red tape' that hampered the delivery of disaster aid, and allegations of nepotism, cronyism and favouritism. The complaint mostly came from the lower income groups for the simple reason that they were the most affected by the tsunami.

An important contributing factor to the unrest is a perception of resources being distributed to some ethnic groups and not to others, so we now move to consider the ethnic dimension (Horowitz, 2001) and ethnic relations during and after tsunami to identify the potential for the activation of ethnic tension as a result of the population's dissatisfaction and frustration with the government's response and recovery programmes.

Ethnic Relation and Tsunami

Ethnic relations are commonly known as 'thorn in the flesh' (Malay proverb) in Malaysian society, particularly in Penang because the distribution of the Malay and non-Malay (particularly Chinese) population is nearly equal (Malay 40.9% ; Non-Malay: Chinese 41.5%, Indian 9.9%, Non-Citizens 7%) and Others 0.3%) (Department of Statistics, 2013). This equality is aggravated by spatial segregation, whereby the non-Malays are concentrated in the city areas, such as Georgetown (63%) and Butterworth (52.7%) and Bukit Mertajam (73.5%), whereas the Malays are concentrated in the rural areas

such as in Seberang Prai Utara (58.5%) and Barat Daya (57.8%) (Department of Statistics, 2010). This segregation is also present in the education system, in which the non-Malays, particularly Chinese and Indian students, usually go to vernacular schools whereas the Malays opt for national schools, which leads to less interracial interaction which can contribute to cultural and religious misunderstanding.

An interview with the former Penang State Representative of Teluk Bahang of Penang, Faridah Arshad on 21st July 2014, emphasised that some Chinese in Penang are more 'kiasu' (selfish), impertinent and racist than Chinese from other states,. A Kedah Chinese respondent said he heard Penang Chinese saying that they will never be satisfied until the Chinese take power from Malay and govern the country. This argument was corroborated by the then Deputy Chief Minister of Penang, Dr. Hilmi Yahya in an interview on 17th July 2014, who pointed out that the Penang Chinese now dominate the country's economy and their ambition is to take control of politics as reflected in 2008 and 2013 election, where the trend of Chinese voting was to support the ruling party BN, in his Parliamentary constituency of Balik Pulau keep decreasing from 51% in 2008 to only 4% in 2013, despite the government providing a lot of assistance to the Chinese community such as monetary assistance to Chinese vernacular schools.

How did this ethnic segregation impact on perceptions of the government's response to the tsunami? Figure 4.20 shows that more than half (57%) of respondents preferred to help neighbours of the same ethnic background both during the tsunami response period and the post-tsunami rehabilitation. Out of the 57%, 35% of them are Malay, 34% Indian and 31% (Others, includes Chinese) (Figure 4.21). This data implies strongly that the affected communities are divided by racial lines reinforced by spatial segregation. During the sampling in the tsunami housing scheme in Tanjung Bungah, the resident's representative claimed that the government gave extra attention to the Chinese and so they voted for the opposition parties in the 2008 election. This claim was corroborated by Dr. Hilmi Yahya (former Deputy Chief Minister of Penang during the 2004 tsunami) in an interview on 17thJuly 2014,

Figure 4.20: Ethnic Preference in Giving Assistance during Tsunami Response and Recovery

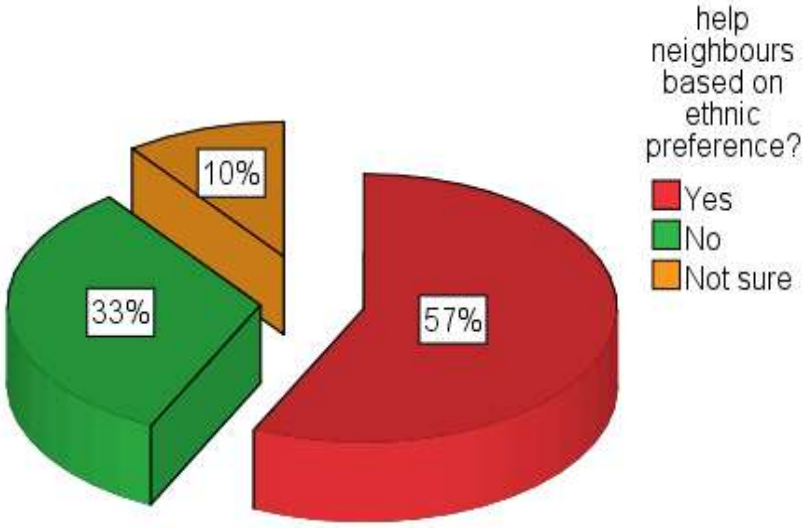
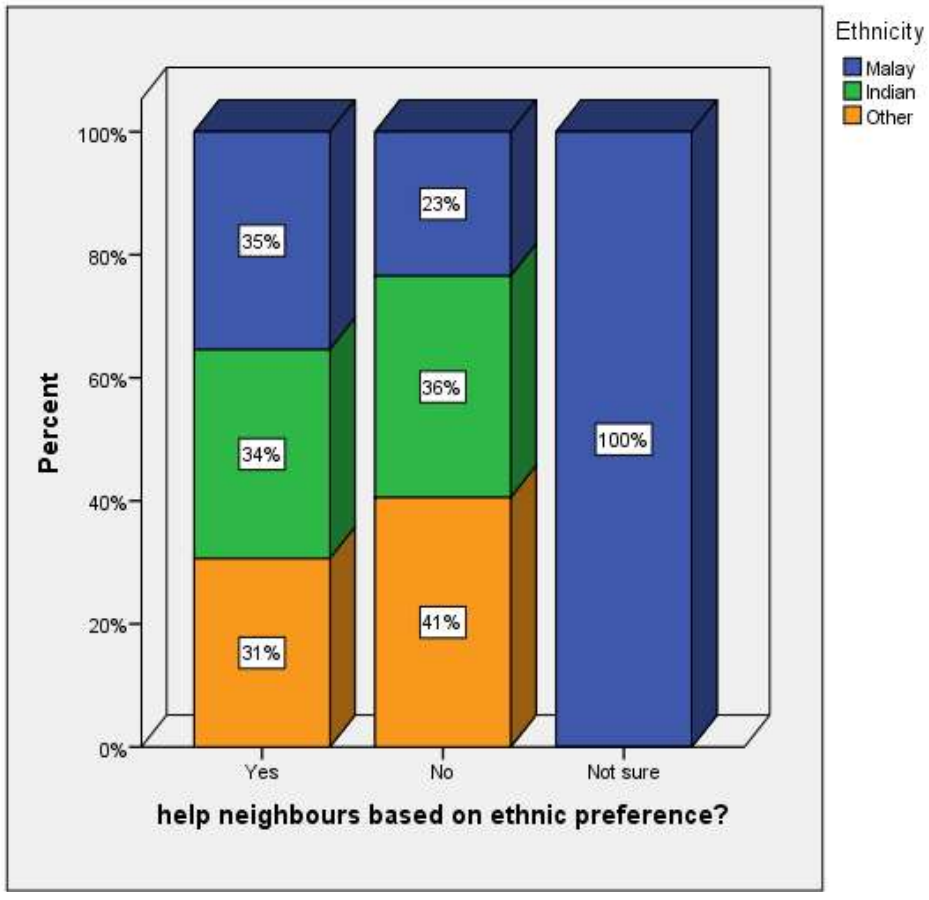


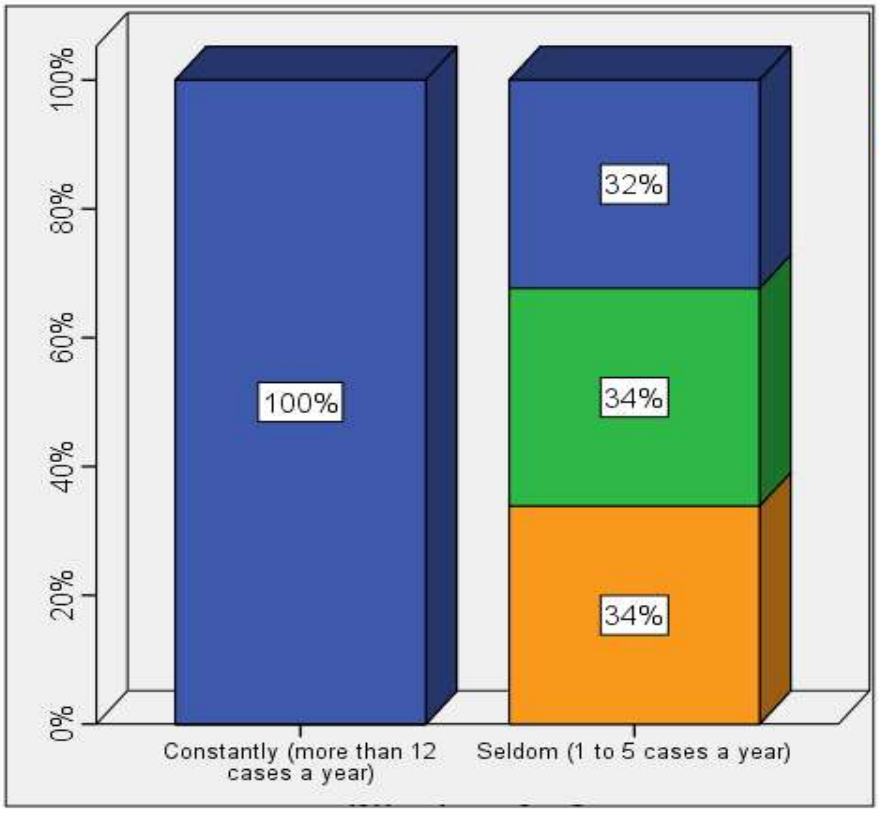
Figure 4.21: Ethnic Preference in Giving Assistance during Response and Recovery by Ethnicity



Faridah Arshad (former State Assembly Representative of Teluk Bahang in an interview on 21st July 2014 and Riduad Azuddin (Perkasa Penang Youth Chief) in an interview on 22nd July 2014, in which they unanimously agreed that the Chinese were looking for political power after they secured an economic advantage.

With regards to the ethnic conflict, some 12% of respondents claimed there were both ethnic stress and some conflicts before the 2004 tsunami. However, only 3% of respondents stated this occurred constantly (more than 12 cases a year) and a large majority, 97% described it as a rare occurrence with one to three cases a year. Analysis by ethnic group shows that all groups shared the same perception, in which, 32% of Malays, 34% of Indians and 34% of others (including the Chinese) perceived ethnic conflict to be occasional (Figure 4.22).

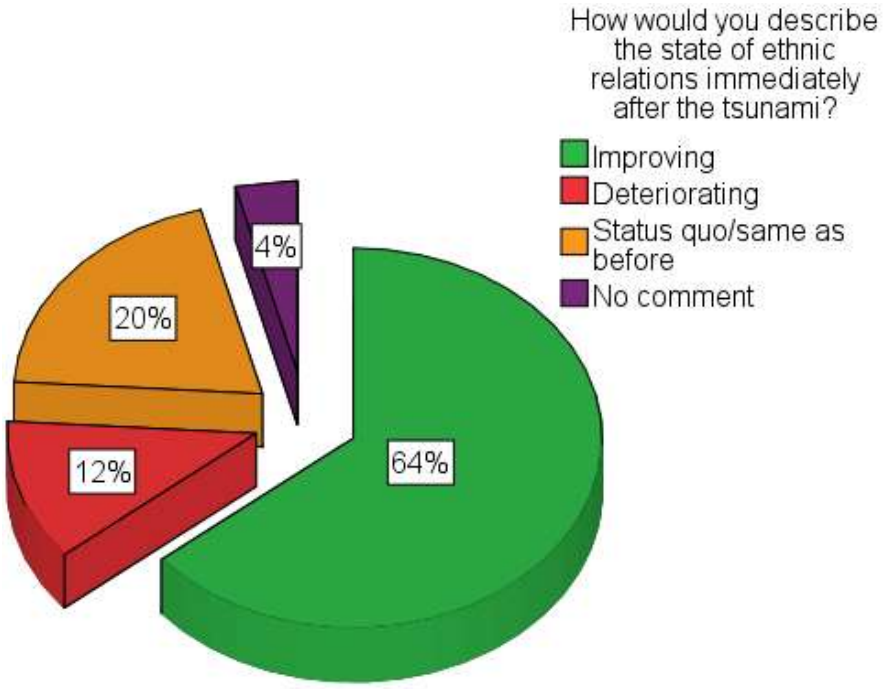
Figure 4.22: Perception of Ethnic Clash by Ethnic Group



This condition satisfies a basic component of a dormant complex political emergency in the case of Penang. In terms of the state of ethnic relations during and after the tsunami, 12% respondents (81% Malay and 19% Indian) perceived inter-ethnic relations were deteriorating immediately after tsunami and with a marginal increase to 14% (76% Malay and 24% Indian) in the years after the tsunami (Figure 4.23 and Figure 4.24). Another 20% indicated they believed that relations between ethnic groups remained largely unchanged.

The evidence indicates a substantial deterioration in ethnic relations in the minds of some respondents immediately after tsunami and this evidence is corroborated the evidence of ethnic preferences when it came to giving assistance in the response and recovery phases (see Figure 4.20). Some 10% of respondents identified no particular problem in ethnic relations before tsunami changed their perception to deteriorating after tsunami, and another 4% who described ethnic relations as good before tsunami perceived it to be deteriorating after the tsunami (Table 4.6). However, 19% of respondents (all Malays) believe relations improved, and 20% respondents suggested the same in the tsunami recovery and rehabilitation phases. This suggests that approximately 1 in 5 of the population retained an optimistic view of ethnic relations and this group acted as an important stabiliser during a period of major stress, perhaps helping prevent ethnic tensions running out of control, although 4:5 of the respondents did not believe the situation improved. A second inhibiting factor is the role of elections as 'safety valves' to ease ethnic tensions by channeling discontents democratically into polling box. The state of ethnic relations is haunted by the legacy of the May 13, 1969 tragedy despite many attempts by the government to respond by introducing and implementing various preventive measures policies such as New Economic Policy-NEP (1970-1990), with the objective of restructuring ethnic relations, so that the politics, social and economy are not identified or characterised by ethnic interest, and to eradicate poverty irrespective of race. However, I argue that NEP policies were not adequately implemented and were subject to several weaknesses such as realignment of employments into two main categories; public sector dominated by Malays and private sector

Figure 4.23: Perception of State of Ethnic Relation During and After Tsunami



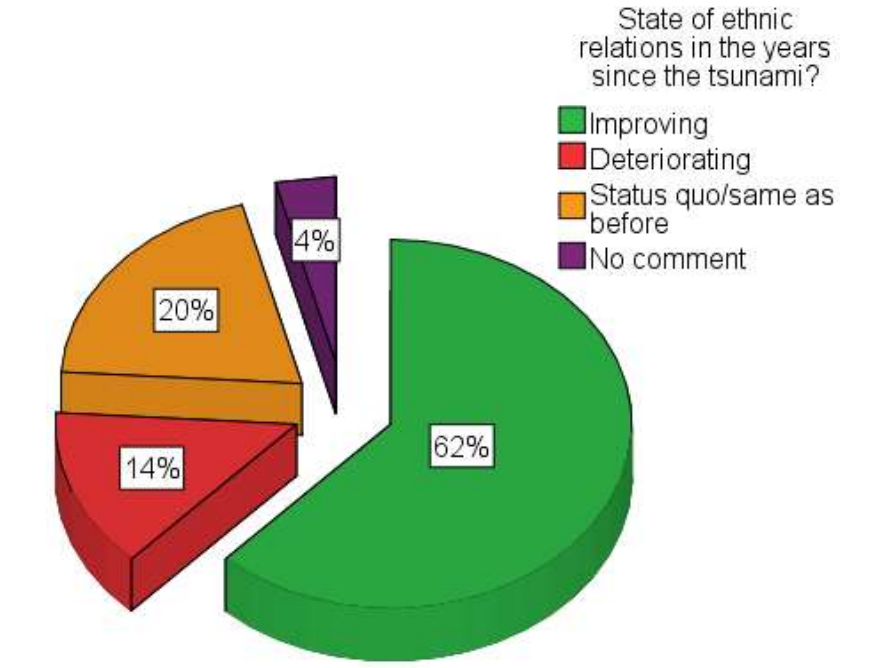


Figure 4.24: Perception of State of Ethnic Relation During and After Tsunami

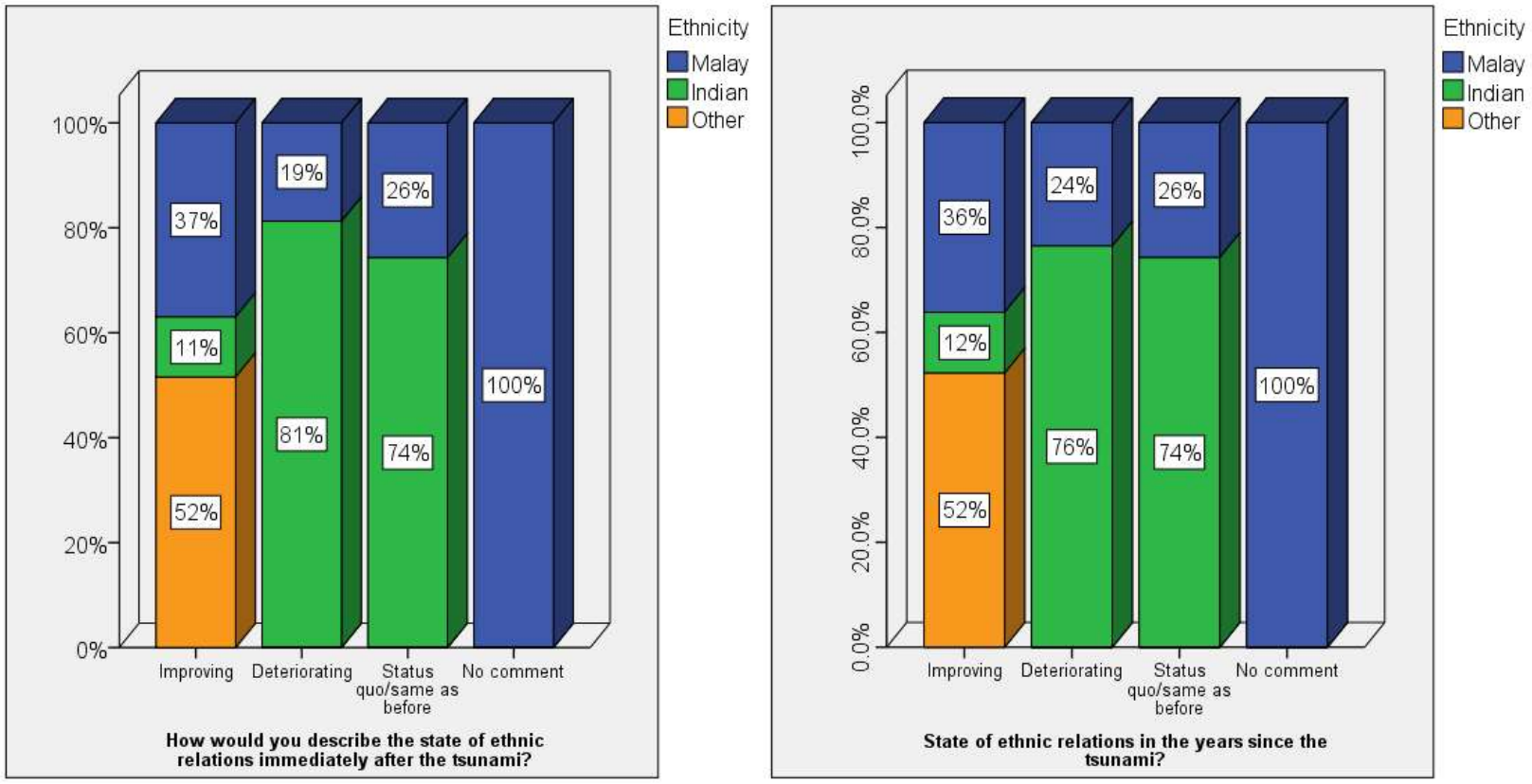


Table 4.6: State of Ethnic Relations Before and in the Years Since the Tsunami

Cross-tabulation

% of Total

		State of ethnic relations in the years since the tsunami?				
		Improving	Deteriorating	Status quo/same as before	No comment	Total
State of ethnic relations before tsunami	Good	62.0%	4.0%	16.0%	4.0%	86.0%
	No particular problem		10.0%	4.0%		14.0%
Total		62.0%	14.0%	20.0%	4.0%	100.0 %

predominantly non-Malays, particularly Chinese. This, in turn, aggravated the ethnic tensions between the Malays and non-Malays. NEP also failed to integrate ethnic groups through one system of education with the national language as the medium of learning, by the continuation of vernacular schools that hindered the integration process, although the Reid Commission (tasked for formulating the Federal Constitution before independence in 1957) made a recommendation that the vernacular schools should be reviewed after 15 years of independence. The weaknesses of NEP in terms of its implementation was corroborated by Secretary NSC in the interview on 7th August 2014, argues that the NEP benefited the 'greedy Malays' instead of the 'needy Malays'.

This fragile ethnic condition, was tested and challenged by the 2004 tsunami and this is reflected by the willingness of the affected populations who admitted that they preferred to give help to the neighbor from the same ethnic group. It implies that ethnic relations, which were dormant during the normal and peaceful times became apparent when the disaster struck that the action taken by every ethnic groups were determined and influenced by their racial prejudices, which contributed to the resentment towards the government and which was reflected at the polling stations. The next chapter will consider this.

Conclusion

This chapter has discussed the effects of the tsunami that was one of the largest in history that affected coastal countries across the Indian Ocean region from Indonesia, Malaysia, Thailand, Myanmar, Indian, Sri Lanka to Somalia in the African continent. In Malaysia, the total loss of life was 68 and 8,292 people affected and approximately RM100 million losses due to property and infrastructure damaged. In Penang, the tsunami destroyed 521 houses and 1,430 boats. Subsequently, the government realised the urgency of developing an early warning system and an effective response mechanism by reassessing NSC Directive No. 20. The Abdullah administration introduced various response, recovery and rehabilitation programmes such as 'Rumah Tsunami' (housing aid), 'Bantuan Wang Ehsan' (monetary aid), Fishery and Agricultural Aid that did not satisfy many of the affected people. 91% of my research sample stated that the amount of 'Wang Ehsan' was not enough and

70% complaint about the late distribution of 'Rumah Tsunami'. The ineffectiveness of government's disaster response affected communities, which created a pool of discontent that contributed to an indirect political tsunami (in the case study areas) in 2008.

This chapter laid the foundation for the next chapter exploring the frustration and dissatisfaction of affected communities that led them to vote for the opposition party in 2008 election in contrast to 2004. This change was a manifestation of local discontents (on other recurring issues such as rising cost of living, racial and religious issues, corruption allegation and misused of public fund as argued by other researchers such as Case (2010), Ming (2008), Chew (2015), Ghazali (2009) and Tay (2008) in the case study areas exacerbated by the tsunami, which my data captures. The tsunami is, I would argue, a significant, and possibly the main catalyst, indirectly triggering a political change that led to the political transformation (in the case study areas) in Penang in 2008 General Election.

Chapter 5: The Tsunami's Indirect Effects on Politics

Introduction

This chapter discusses the political consequences of the disaffection generated by the maladministration of the aid and indirect effects on politics in the case study areas. I consider the dissatisfaction of affected people on post-tsunami response and recovery programes as indirect factors that contribute to the 2008 election because there are other factors influenced the voters such as rising cost of living and unaffordable housing price. I offer an alternative explanation of the unpredicted election results (at local level) that indirectly associated with the tsunami because other researchers concentrate on difference aspects such as a study by (Chew, 2015). This argues that the concept of people's sovereignty (ketuanan rakyat), proposed by the opposition parties, as compared to Malay sovereignty (ketuanan melayu), which put the special recognition (such as allocation of scholarship, housing lots, and business permits) on the Malay and Bumiputra (sons of soil) communities that uphold the ruling parties led the non-Malays and young voters (particularly in the urban areas) to vote for opposition parties. Chew suggests that this Malay sovereignty "intensifying issues of corruption, nepotism, favouritism, cronyism, human rights abuses, rising cost of living and rising incident of crime that lead to major swing of votes into opposition in 2008" (2015, 223).

Approximately 85% of respondents in my case study indicated that their evaluation of the government's programmes was very important in influencing their voting preference. The result of this change (voting for for the opposition coalition) in preference was that the tsunami affected constituencies shifted their support from the ruling party coalition, the National Front (Barisan Nasional-BN), to the opposition coalition, People's Alliance (Pakatan Rakyat-PR). This implies, to say the least, a relationship between the government's performances and voting in 2008 in the tsunami affected areas: 70% of sample described their voting as a 'protest vote', which can be expressed by the term 'tsunami politics', a term used in Malaysian politics to indicate the protest. The failure of Prime Minister Abdullah's administration to successfully

manage post-tsunami events and its subsequent dramatic defeat in 2008 General Election was criticised by many quarters, in particular by the former Prime Minister Dr. Mahathir. I shall now discuss the political scenario before the tsunami struck in 2004.

Politics before the Tsunami

Political developments between 1998 and 2004 encouraged the Malaysian politics to move towards a two-coalition party system: the ruling BN and the opposition PR. The 1998 Reformation Movement provided an opportunity for opposition parties to create platform for a coordinated and systematic coalition led by Anwar Ibrahim. As a charismatic leader, Anwar succeeded in unifying and harmonising three main opposition parties with contrasting ideologies: PKR (liberalist), DAP (Socialist) and PAS (Islamist). The 1998 reformation movement, popularly known in Malaysia as 'Reformasi', could be regarded as a precursor to the development of the opposition political struggles that later exploded as 'tsunami politics' in 2008. Continuing the tsunami metaphor, the 1998 'Reformasi' was the first wave that produced the 'political earthquake' in the 1999 election, in which the opposition coalition PR posed a stiff competition to BN and increased its Parliamentary seats to 23% from 16% (in the 1995 election) and shook the domination of the BN in state legislative elections in two states and formed a new state government in Kelantan and Terengganu (for the first time since independence) (Ghazali, 2015).

The momentum of 'Reformasi' was contained by the BN's political strategies in 2003 when UMNO supervised the transition of power from Dr. Mahathir to Abdullah Badawi as the Prime Minister and the President of UMNO. This transition gained public support in 2004 due to the positive image of Abdullah as a 'clean', transparent and accountable person. His pledge in the 2004 election campaign to establish a more democratic government by promising freedom of press and human rights captured the hearts and minds of a majority voters and he won a landslide victory in the 2004 election, with 90% of Parliamentary seats. The PR, apparently discredited by BN's victory, was activated by 'Reformasi' movement in 1998 with series of street demonstrations that often descended into violence, and subsequently became inactive and dormant.

The test of the Abdullah administration's performance came nine months after the election, when the tsunami hit and caused massive damage to property, infrastructure and loss of life.

(Case, 2010) argues that the baseline for an unexpected outcome of the 2008 Malaysian General Election differs from that the literature suggests, which centres on the lost control of dominant ruling parties over public resources, fading patronage, and decreasing popular support for elites. Instead, in the Malaysian case, despite the ruling alliance party having control of resources, the unpredicted election results can be attributed to intensifying popular discontents among the party (in particular UMNO) members with regards to cronyism and favouritism. As for the voters in general, the dissatisfaction caused by allegedly electoral manipulation, corruption, and misconduct incompetent cabinet ministers, a rising cost of living and inflation, unemployment rate, increased and impacted on electoral loyalties. The public outcry over the disparities within and between ethnic groups lead to public protests organised by Coalition for Clean and Fair Elections (or BERSIH) in 2007 and 2008. In a front-page editorial, The New Straits Times (2008: 1), that "the people have long been disgusted with the kind of boorish and loutish behaviour that UMNO leaders have exemplified because of their grip on power since independence in 1957" (Case, 2010, p. 143). As a consequence, the 2008 election demonstrates that the ruling party lost substantial Malay support with 5% swing to the opposition. Ming (2008) suggests that the ruling alliance party- Barisan Nasional (National Front) got Malay voters 58%, Chinese 35% and 48% Indian. (Chin & Huat, 2009) argue that the 2008 election demonstrates the disapproval and rejection of the alleged authoritarian of UMNO led ruling alliance r, in particular under the premiership of Dr. Mahathir Mohamad (1981-2003), who accused by the opposition, abuse of power, dictatorship, curbing the freedom of parliament, media freedom and undermining the rule of law (by interfering with the judiciary There were three significant public protests in 2007 prior to the election that contributed to the unprecedented outcome of the 2008 election. First, the V.K Lingam (a lawyer with strong ties with politicians) video clip case, was unveiled by the opposition party (PKR) in August 2007,to demonstrate the issue of judicial

integrity with regard to the appointment of Federal Court judges, of which he acted as the 'playmaker' and 'broker'. This case led two thousand Malaysian Bar Council members to march on the Prime Minister's Office in the administrative city of Putrajaya to protest at political interference with the judiciary. Second, a rally of fifty-thousand people (mix-ethnic and mostly young urban protesters) organised by BERSIH and opposition parties on 10th November 2007 protested against unfairness in the election process such as the allegation of 'phantom voters' and gerrymandering. Third, the protest organised by the Hindu Rights Action Force (HINDRAF), saw thirty-thousand Malaysian Indians gathered in Merdeka Square and marched towards Kuala Lumpur City Centre building (KLCC - the tallest twin tower in Malaysia) to show solidarity in protesting the alleged discrimination against Malaysian citizens of Indian origin.

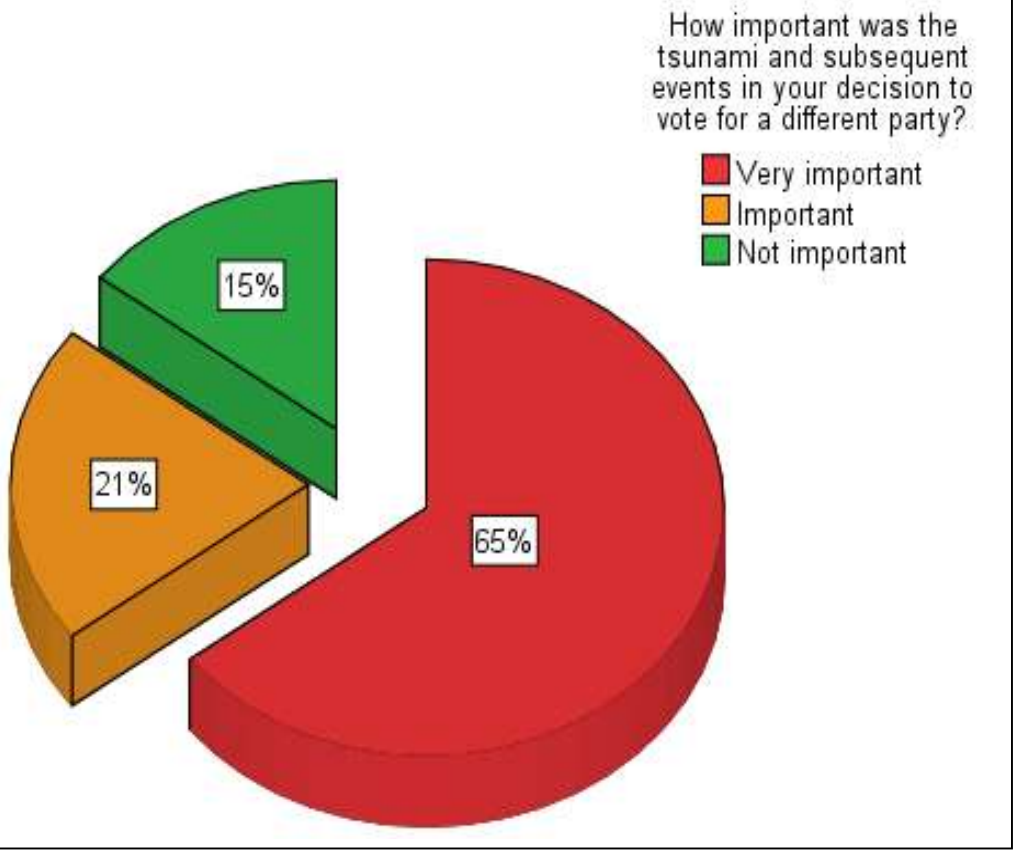
In post-election analyses, UMNO blamed the BN's components of MCA, MIC and GERAKAN of not fully explaining government policies, in particular regarding special privileges of Malays and Bumiputra which were laid down in the Federal Constitution. Likewise the component parties blamed UMNO for raising up the sensitive issues of 'Ketuanan Melayu' (Malay Sovereignty) during the UMNO General Assembly that was described by the opposition as a double standard policy and treating other ethnic groups as a second class citizens. The Opposition countered with the concept of 'Ketuanan Rakyat' (People's Sovereignty), which emphasis on the equal treatment of every citizen regardless of ethnicity, which influenced the non-Malays and middle class voters. The next section explores the alternative explanation of the 2008 election results at local level, in particular in the tsunami affected areas in Penang, whether the tsunami and its aftermath response influence the voters.

Indirect Political Effects

This section discusses the indirect political effect of the tsunami in the affected areas in Penang. However, due to time and resources constraints, I focus only on my case study areas and the analysis is not seeking to generalize to the Penang and Malaysia because the effect of tsunami is localised and case specific.

There is evidence from the case study the relationship between the government agencies' tsunami response and the 2008 election (Figure 5.1), 65% of the respondents indicated the government's

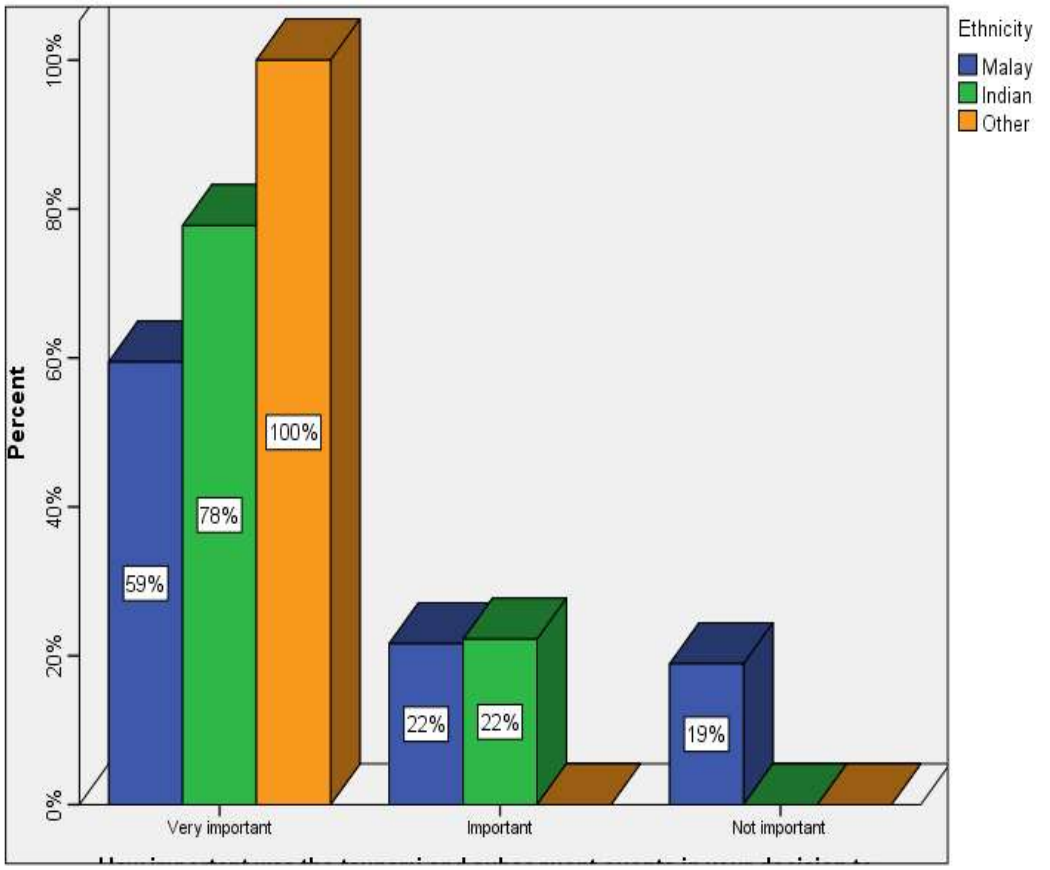
Figure 5.1: The Importance of Tsunami's Response and Recovery Programmes in Relation to Voting Decision



performance was very important and 20% important, a combined figure of 85%, compared to only 15% who stated that they were not important to their decision to vote.

Figure 5.2 gives ethnic group in relation to party vote and whether voting was influenced by the government's performance. Some 78% of Indian voters considered government's performance 'very important' and 22% 'important' in influencing their votes in the 2008 election. Some 59% of Malays stated government agencies' response was very important and 22% important. For other ethnic groups (Chinese and others), 100% stated government's efficiency and effectiveness during rehabilitation was very important. This data

Figure 5.2: The Importance of Tsunami's Response and Recovery Programmes in Relation to Voting Decision by Ethnicity



therefore, implies a strong relationship between the voters' evaluation of government performance and their voting behaviour in 2008, which influenced voters to cast a protest vote against the ruling party, by voting the opposition. Some 75% of my research sample. This conclusion was supported by the Secretary and former Deputy Secretary of NSC in the interviews who stated that the popular disappointment with the government's late response to the tsunami, prompted voters to vote for the opposition. 78% of Indian respondents affected by the tsunami claimed that the performance of government agencies during the tsunami response and recovery influenced their decision to vote for the opposition, implies a perception of ethnic bias and a perception of failure by the government leading to a decision to punish the governing party at the polls for failure, which derived from the dissatisfaction and frustration of tsunami affected people that led to the

emergence of ‘tsunami politics’ in Penang. The implication is that discontent with the recovery programmes stimulated political change.

With regards to the parties’ respondents supported in the 2004 and 2008 elections, votes for the opposition coalition increased substantially (Figure 5.3) from 5% in 2004 to 25% in 2008 election and maintained the same percentage differential in 2013. This suggests the change in voting patterns is reinforced. Table 5.1 gives a detailed analysis of the relationship between the 2004 and 2008 elections. 75% voted for the BN in 2008 and 25% voted for the PR. Of the 75% who voted for the BN, 79% of them were loyal to the BN and voted BN in both 2004 and 2008. Out of the 25% who voted for the PR in 2008, 20% of them swung from BN and 5% remained loyal to the PR in both elections. This implies that 20% of BN voters swung to PR in the 2008 election. Thus, 1 in 5 voters changed allegiance, a very large shift in the context of Malaysian politics: Further, 70% of respondents stated that protest was the reason they voted for the PR in the 2008 election (Figure 5.4). Respondents protested government because of dissatisfaction and frustration with the government’s response and the post-tsunami rehabilitation programmes: 50% of all respondents believed government agencies arrived late.

With respect to the recovery programmes, 40% believed allocations of aid favoured certain political and ethnic groups but a smaller percententage, 20%, believed the distribution of aid was influenced by nepotism and cronyism. This is in line with the high percentage of 65% (very important) and 21% (important) of respondents who stated that the government’s response and recovery programmes influenced their decision on which party to vote for in 2008 election.

Figure 5.3: Comparison of Which Party Respondents Vote for in 2004, 2008 and 2013 General Elections

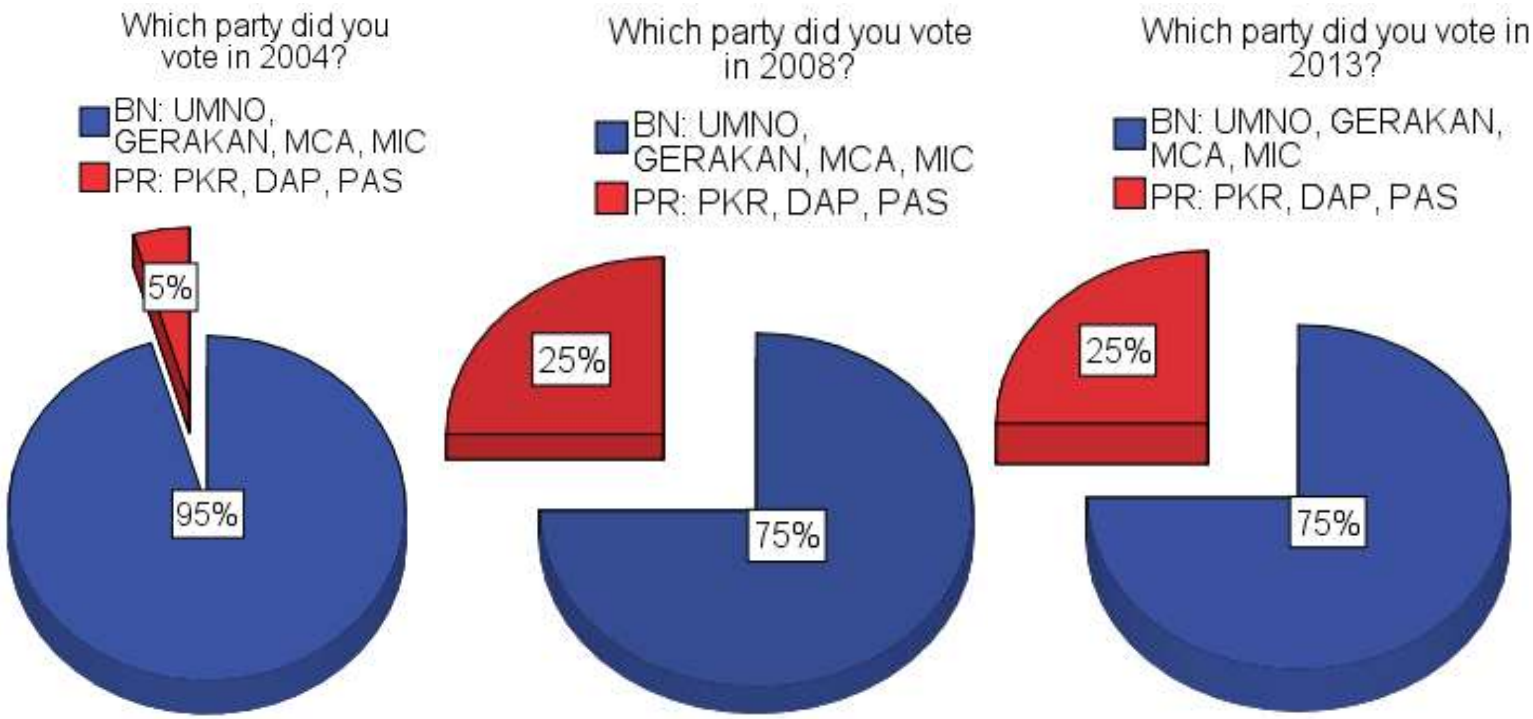


Table 5.1: Cross-tabulation of Which Party Respondents Voted in 2004 and 2008 Elections

			Which party did you vote in 2008?		
			BN: UMNO, GERAKAN, MCA, MIC	PR: PKR, DAP, PAS	Total
Which party did you vote in 2004?	BN: UMNO, GERAKAN, MCA, MIC	% within which party did you vote in 2004?	79%	21%	100%
		% of Total	75%	20%	95%
	PR: PKR, DAP, PAS	% within which party did you vote in 2004?		100%	100%
		% of Total		5%	5%
Total		% within which party did you vote in 2004?	75%	25%	100%
		% of Total	75%	25%	100%

Pearson Chi-Square 0.012 at 95% confident level.

Figure 5.4: Reason of Voting Different Party in 2008 General Election

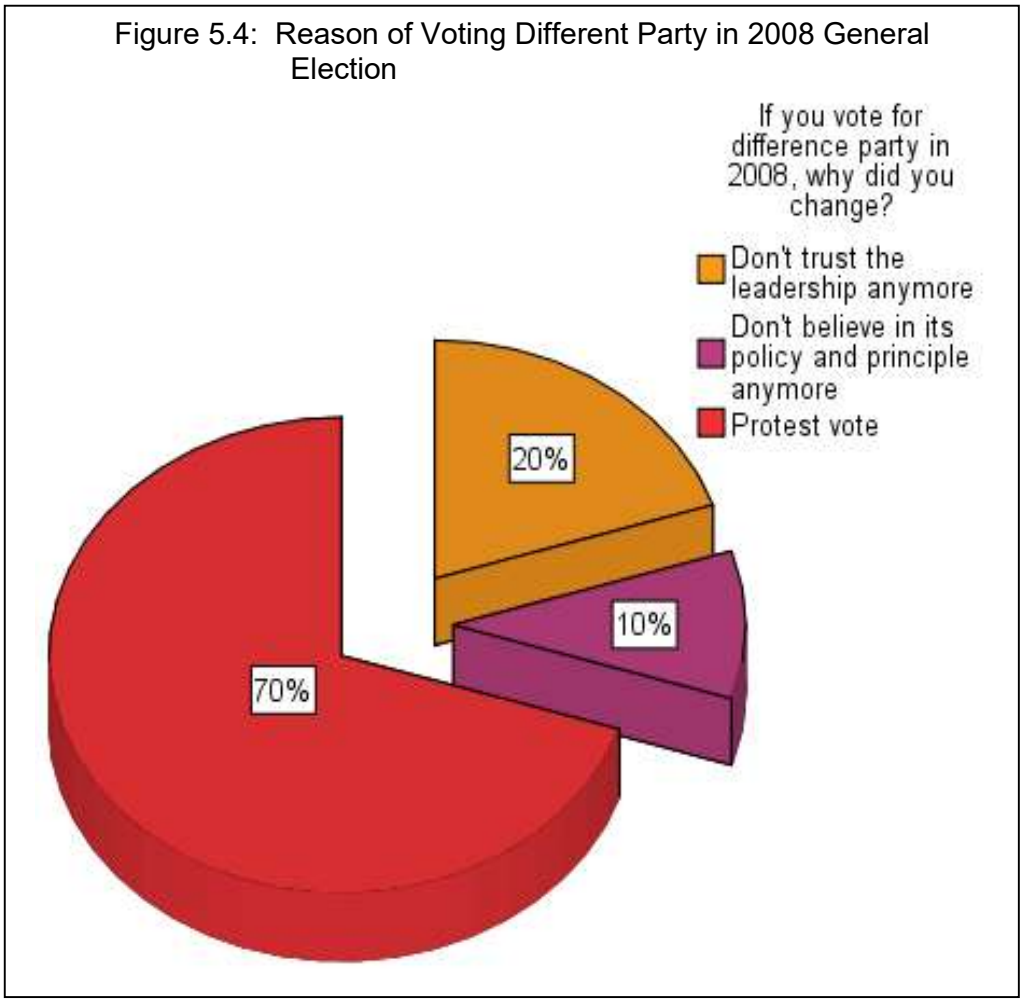


Figure 5.5 shows that 100% of the families below the official poverty line (income below RM9,600 a year) voted PR as a protest against the ruling party. On the other hand, 78% of the high income groups voted for the opposition because they no longer trusted the BN's leadership. This suggests that discontent was uniformly high across income groups.

Figure 5.6 provides the reasons respondents voted for a party by ethnic group. It shows that the Malays were divided between a protest vote and lack of trust in the party's leadership: 46% and 54% respectively. A majority of Indian respondents (48%) changed votes because they did not believe in or trust the ruling party. Indians, interviewed during the course of the research, claimed many Indians felt frustrated about the Malaysian Indian Congress

Figure 5.5: Reasons of Voting Different Party in 2008 General Election by Income Group

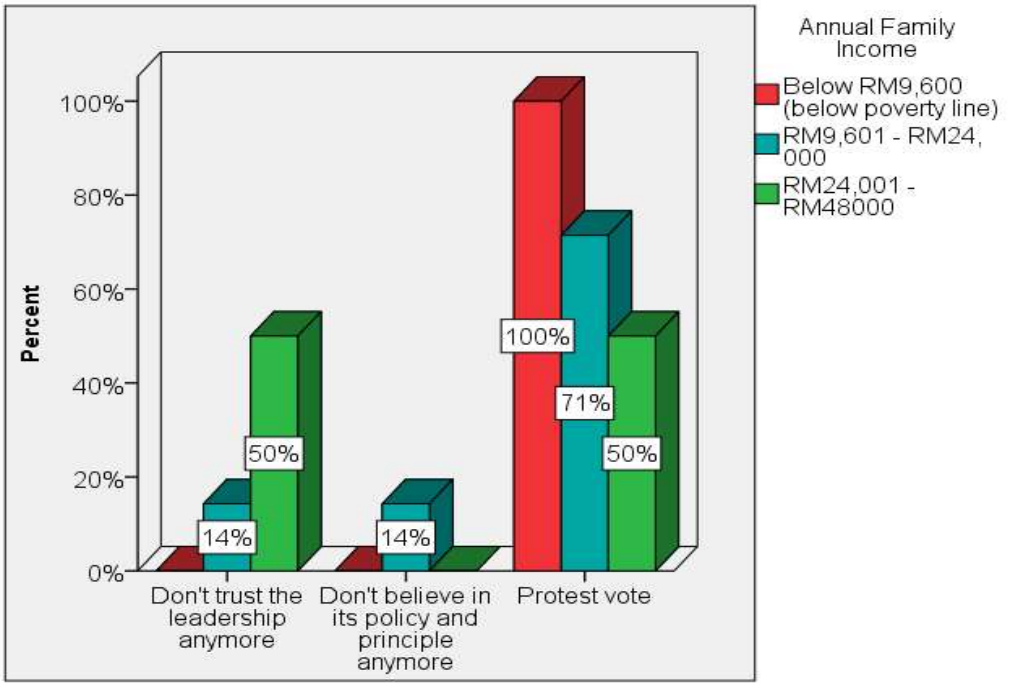
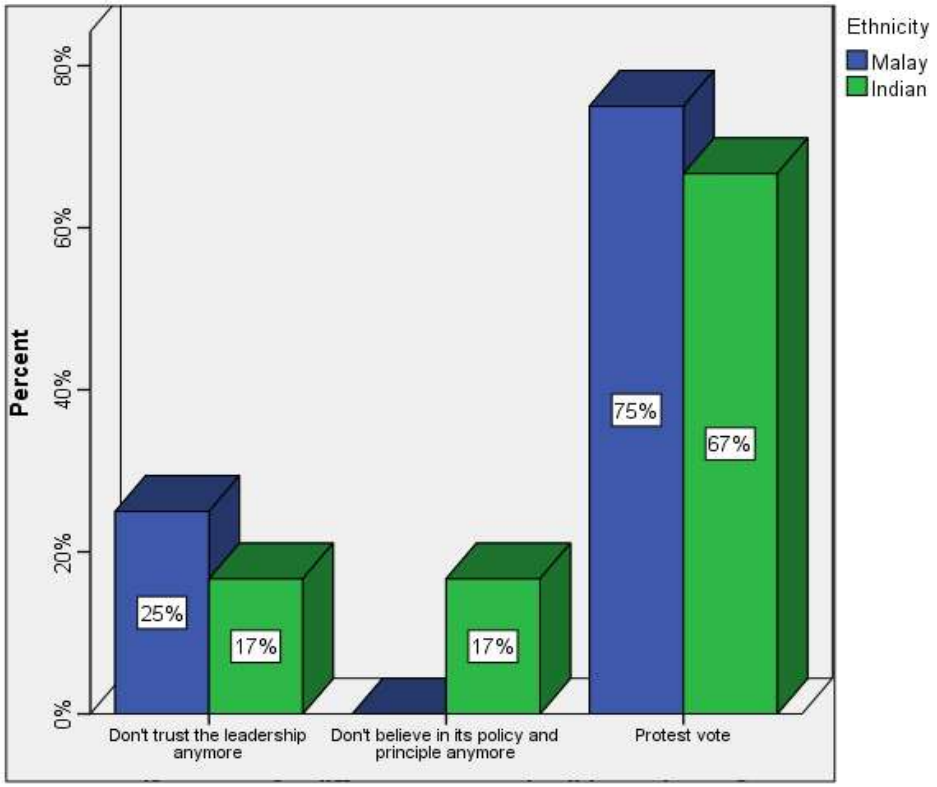


Figure 5.6: Reasons of Voting Different Party in 2008 General Election by Ethnic



(MIC) which was one of BN's components, which was also late in providing assistance to ethnic Indians and broke their promises on monetary aid. Again, we see a sharp fall in trust and by extension loyalty, which erodes previous electoral behaviour.

Figure 5.7 compares the voting pattern of respondents by ethnic group in 2004 and 2008. It shows that the ethnic Malay vote for BN dropped from 100% in 2004 to 89% (-19%) in 2008 and ethnic Indian's vote for BN substantially decreased from 78% to 22% (+56%) between 2004 and 2008. Malay votes for the opposition coalition parties increased by 11% in 2008 election and Indian votes for the PR increased by 56% in 2008. The BN enjoyed strong support from Malays and Indians until 2008 when 11% and 78% of them respectively shifted to the PR and this pattern was sustained, becoming permanent in the 2013 election. This was a seismic shift in Malay and Indian political history because traditionally both were loyal supporters to the United Malays National Organisation (UMNO) and the Malaysian Indian Congress (MIC), two of the strongest parties in the BN's coalition in every election since independence. The substantial swing of Malay votes, according to my research, was due to a protest vote (30%) and no longer trusting the UMNO leadership (10%) that suggest a rejection based on the parties' effectiveness in delivery, because of cronyism and nepotism (40%) and doubts over the integrity of the leadership (20%). Indians voted for the PR in the 2008 elections because they no longer had confidence in the MIC party leadership (10%) or its policies and principles (10%). Interviews with Indian respondents revealed that all who voted for the opposition believed that the MIC had failed to deliver its promise to improve living conditions and this led them to vote against the MIC in the 2008 election as a protest vote (40%).

Figure 5.8 shows that there was an increase in the votes of the middle income group who voted for the PR in 2008 election with 61% from family income of RM24,001 to RM48,000 (compared to 2004 election when, 26% voted for PR). The discontent over the tsunami response also influenced government civil servants' votes that swung substantially from BN (26%) to PR (49%). This indicates that government servants, who have been known as

Figure 5.7: Voting Pattern by Ethnic Group in 2004, 2008 and 2013 General Election

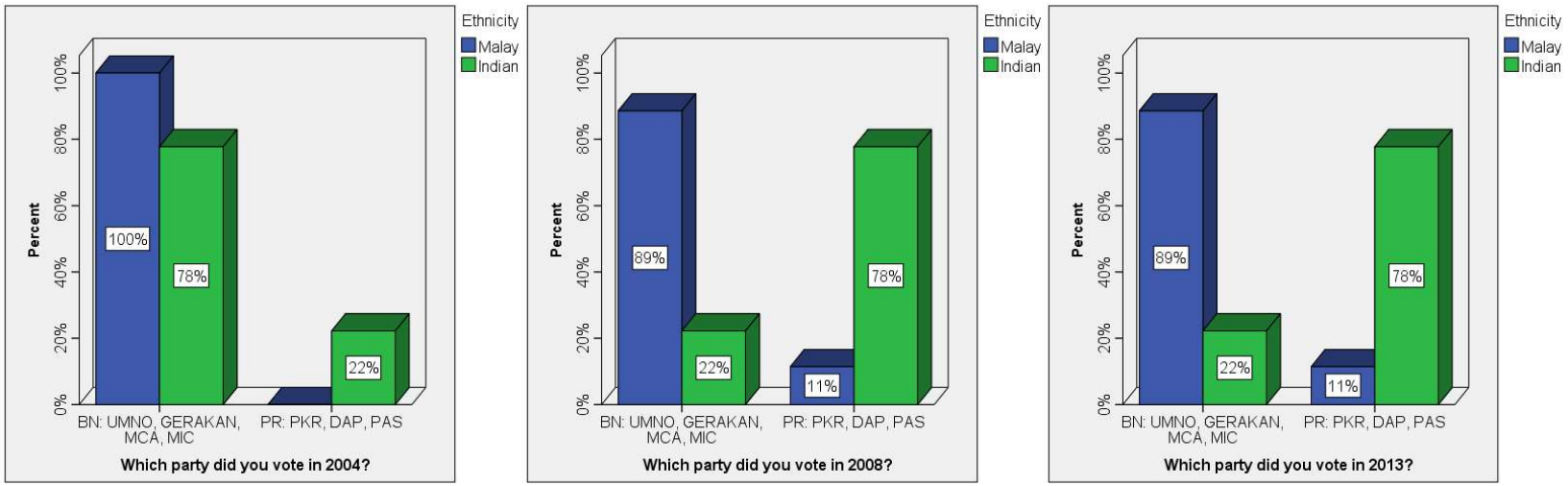
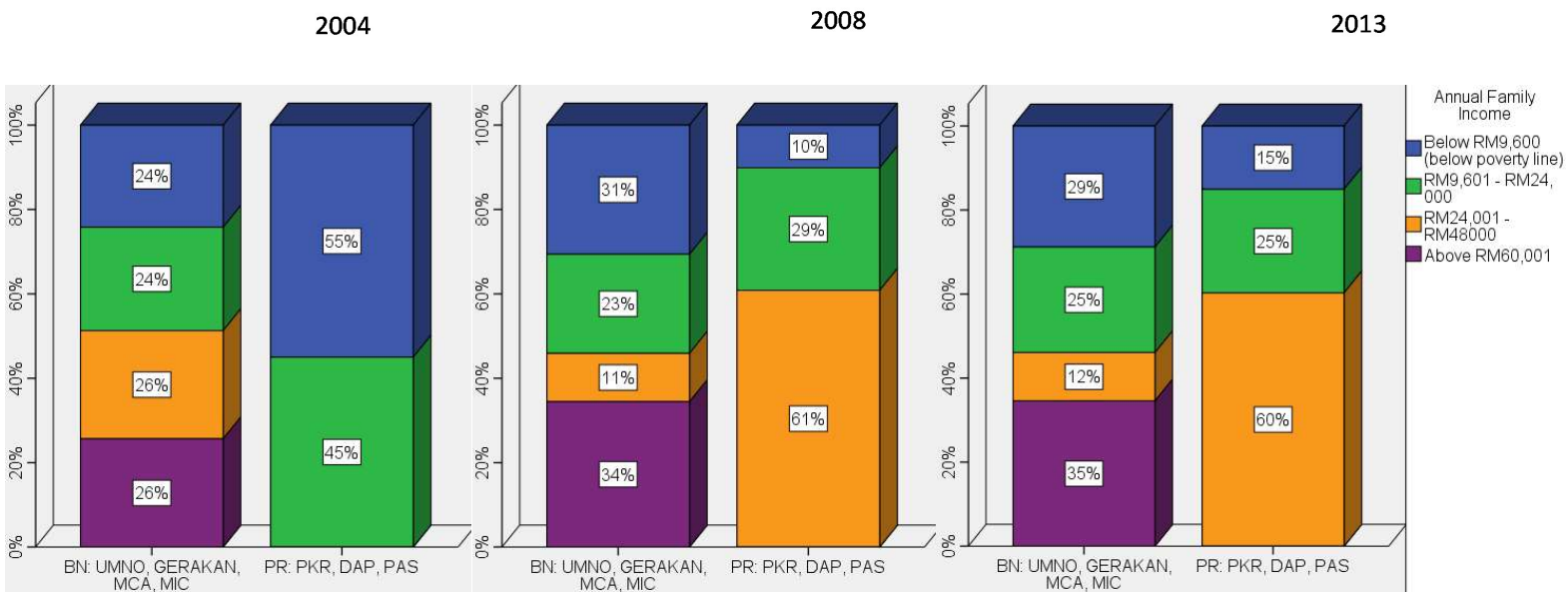


Figure 5.8: Voting Pattern by Income Group in 2004, 2008 and 2013 General Elections



loyal supporters of the ruling party since independence, have also shifted to PR because they no longer trust the leadership. Further analysis by age group demonstrates that the middle aged (41 to 50 years) doubled their support for PR from 21% (2004) to 41% (2008) and this was sustained in 2013 with 43%.

There was evidence of indignation and discontent with the government's slow progress in distributing disaster monetary aid and allocating the tsunami resettlement house, voicedout in the mass media. Online newspapers also reported that about 21 affected fishermens' families in Pulau Betong and Sungai Batu, Balik Pulau, claimed that they received no monetary aid or financial assistance from the government after more than a year of the tsunami. Many of them who lost their boats and fishing equipment only received donations from the public and tithe contributions RM200 from the Majlis Agama Islam Pulau Pinang (MAIPP) or Penang Islamic Council. Some of them alleged that there was discrimination in distributing the disaster assistance and questioning where was the donation money from the public to the disaster fund being allocated (Mohd Nor, 2005). UMNO allegedly dominated and controlled the allocation process that exposed to the mismanagement, nepotism and cronyism as previous cases of discrimination in Kedah and Penang, where the personnel at the distribution centre allocated disaster aid with priority to UMNO members (Mohd Nor, 2005).

Reporting by Utusan Malaysia (a Malay language newspaper) revealed that tsunami affected populations were still occupying temporary houses in Tanjung Bungah although the development of permanent 'tsunami houses' had been completed on 27th February 2007. They were promised t the new houses but thiss had not materialized because the negotiations about the housing price between Penang State Government and Federal Government was still in progress. The then Chief Minister of Penang, Mr. Koh Tsu Koon reported that the State Government proposed the price is RM42,000 (£7,636) but the Federal Government insisted to put a higher price of RM52,000 (£9,454), that led to stalemate in the discussion (Utusan Malaysia, 2007).

A second newspaper, Harakah Daily (owned by the opposition party, PAS) reported in 2007 that 39 families in Tanjung Bungah were still waiting for the 'tsunami houses' from the government after their previous applications were not granted on the grounds that they were staying with other families at their old house and the temporary house. They argued that the government should conduct due diligence in determining and ensuring only affected local residents will get the new houses and to avoid the previous mistake of allocating the temporary houses to the ineligible persons such as to a tenant instead of an owner (Said, 2007).

The tsunami affected population in Penang were reported by Malaysiakini (an independent online newspaper) that they made up their mind to vote for the opposition in the next election in 2008 as a protest vote at the alleged mismanagement of tsunami relief fund and the three year failure of the government to keep their promise of allocating the 'tsunami houses' . They claimed that the Prime Minister Najib had promised to resettle them in new permanent houses three previous years earlier. Some of them pointed out their loyalty to the ruling party, Barisan Nasional (BN) had now changed to the opposition, Parti Islam Se-Malaysia (PAS) or Parti Keadilan Rakyat (PKR), two main parties in the opposition coalition, as a protest because the government had only transferred one quarter of RM10,000 total cost of houses' repairs. Others openly declared that they would vote for PAS in order to make sure UMNO will lose in the next election because of their resentment over the mishandling of RM85 million tsunami funds contributed and donated by public. No one knew where the money was distributed, as revealed by the 2006 Auditor General's Report, that established millions of public donations for tsunami fund were mismanaged, resulting in low quality of 'rumah tsunami' or tsunami houses, development contracts were not properly managed, and tsunami housing projects were delayed (Malaysiakini, 2008).

Four years after the tsunami hit, affected villagers remained hostile because the promised 'tsunami houses' were not allocated to them, even though the construction of the houses were completed. They were tired of waiting and were given no hope in getting the houses (Sapidin, 2008). My fieldwork (information from the officer in charge of disaster management at the NSC

Penang Office) establishes that the construction of 'tsunami houses' were delayed for over a year because of the looting and vandalism of construction materials, bad weather conditions, and the developer's problems. However, some of the affected population, as reported by Utusan Malaysia (Malay language newspaper), claimed that the developer never provided a proper explanation of the development progress and issues such as terms of agreements, mode and schedule of payment and compensation for the old houses to be demolished were unanswered, which potentially led to confusion and public disquiet (Sapidin, 2008). For those who already obtained the houses, there were complaints about the low quality of the houses.

In 2014 Utusan Malaysia (Malay language newspaper) reported that some of the affected people had still not received houses after ten years (Utusan Malaysia, 2014). The affected people manifested their anger and disappointment about the promised house allocation and some refused to be interviewed because of their anger, losing trust in anybody who promised their voices will be heard. They even mentioned that they do not want the houses anymore and instead will stay at their current houses even though the tsunami hit the areas; they would rather die than run away. Others felt they were being mocked, fooled and betrayed by the government because many government representatives, particularly the ruling party's politicians, promised the houses would be allocated, but this had not yet being materialised ten years after the tsunami. One of the affected villagers pointed out that politicians used to promise 400 people would be resettled in a new housing area but they have waited over ten years for the promise to be fulfilled. This was the worst hit location where 126 residents struck by the tsunami but they still had not obtained the house (Utusan Malaysia, 2014).

The data from this fieldwork, corroborated by interviews and newspaper coverage, suggests the following conclusions. First, the political change in the case study areas in terms of voters who voted for PR in 2008 was massive; changing from 5% in 2004 to 25% in 2008 election and covers every level of the samples' profile. Second, the political change was unexpected and unprecedented, as confirmed by the interviewees, that there were no

indications that the BN would suffer loss of a two thirds majority and lost control of 5 states included Penang to the opposition until the last night of the election campaign, when the Chinese businessmen' switched support to PR, but they did not expect the drastic loss of the two thirds majority. Third, this change was sustained in 2013 election, which suggests it has been reinforced. This argument corroborated by all the interviewees who unanimously agreed that political change will sustain, and becomes a new trend in Malaysian politics. Fourth, the main reason why voters shifted from BN to PR was because of a protest that resulted from frustration and dissatisfaction with the tsunami response and rehabilitation programmes, which exacerbate the pre-existing and long standing issues of racial and religious tensions, rising cost of living and allegation of 'kleptocracy' that eroded trust in the hitherto dominant party coalition.

Conclusion

The factors that affect political behaviour in the aftermath of disasters include factors of long-standing such as rising cost of living, unaffordable housing prices, rising crime and corruption, accusations of nepotism and cronyism, and the mismanagement of public funds. The parties were already vulnerable to, or even subject to, serious stresses and disruptions before the natural disaster struck. Natural disaster therefore accelerated developments and if the government fails to respond effectively and address the expectations of different groups, and there is the perception of racial bias in its actions, then trouble will develop. I argue that the government did fail to respond adequately (50% of my sample agreed) and there was evidence of ethnic tensions before the tsunami'. I argue that the political change (in the case study areas only) of the 2008 election was indirectly triggered by tsunami, where 86% of my respondents stated that their dissatisfaction with the government's response and recovery programmes influenced them to vote for opposition in the 2008 election. Therefore, it is sensible to assume that the frustration and dissatisfaction regarding tsunami response, relief efforts and recovery programmes that triggers the shift to 'tsunami politics'. However, it is worth pointing out at this stage that the stress generated by tsunami politics were kept under control and institutionalised by the effective functioning of

Malaysia's political institutions and electoral process. Even though these voters were subject of the discontents as outlined in this Chapter, it seems that without the tsunami the discontents would not have been transformed into active voter change, other than over a much longer period of time. I argue that the tsunami triggered and accelerated 'indirect' political change in my case study areas.

There are many examples of how dissatisfied voters turn to the opposition party as a consequence of a poorly managed disaster and relief response. As the contrasting U.S cases of Hurricane Katrina and Hurricane Sandy, and the case of earthquakes in Haiti and Chile, demonstrate an understanding the political and social fabric in disaster stricken areas is a key factor in disaster politics. However, the extent of impact of disaster on politics depends on the nature of the political landscape prior to the disaster, which is unique to a particular country, as well as the post-disaster response. It is depending on the multiple and complex interaction of politics, socio-economic conditions, demographic, and environmental insecurity. The case studies in Penang describe a society characterised by conditions of political and social tension, high exposure to natural disasters, urbanisation, a complex demography, and a pluralistic society (multi-ethnic, cultural, multi-language, multi-religion and socially and spatially or geographically segregated). This resulted in dramatic political change and accelerated a long term transformative adaptation of disaster management mechanism that will be discussed in detail in Chapter 6.

Chapter 6: Transformative Change and Adaptation

Introduction

This chapter discusses the transformative adaptation programmes introduced and developed by the Malaysian Government in response to the 2004 tsunami that transformed the existing structures and mechanisms of disaster management. In designing these programmes, the Government took into account the reaction and feedback of the tsunami affected people and the public outcry concerning the weaknesses of the existing programmes.

In the preparedness stage, the government's transformation efforts are focused on setting up a nationwide Malaysia Tsunami Early Warning System, empowering communities living in disaster prone areas through Community Based Disaster Risk Reduction Programmes (CBDRR), and in a longer term, formulating a new Disaster Management Act and establishing a new National Disaster Management Agency (NADMA). In terms of mitigation, the focus is on embedding disaster mitigation in development planning. While in the response stage, government realised the weaknesses of the NSC Directive No. 20 was its failure to cater for 'unknown' and unprecedented events, such as a tsunami. Hence, the NSC Directive was amended to include a tsunami response. This followed by formulation of a new Standard Operating Procedures (SOP's) for a tsunami that spell out detail procedures for response and recovery. The following sections discuss in detail these transformative adaptations.

Transformation after the Tsunami

Within a month of the tsunami, the Malaysian Government formed a Disaster Management Committee at federal level chaired by the Deputy Prime Minister, comprising the Department of Meteorology, the Department of Public Works, the Welfare Department, the Department of Irrigation and Drainage, and the Remote Sensing Agency, with the National Security Council as the secretariat. The main task of the Disaster Management Committee was to conduct a post mortem on the tsunami response, and plan for the recovery of the affected areas. The most discussed problem was the absence of a tsunami early warning system and the coastal areas without any physical

protection (such as levees or vegetation, particularly mangrove swamps) that suffered greater damage. The Committee agreed to form two technical committees to develop long term tsunami preparedness programmes. These were the Tsunami Early Warning Committee (led by the Ministry of Science, Technology and Innovation), and the National Special Task Force for Rehabilitation of coastal areas, steered by the Ministry of Natural Resources and Environment, which was to discuss in detail tsunami relief management and early warning, and, review NSC Directive No. 20 to develop tsunami standard operating procedures (SOPs), and Community Based Disaster Risk Reduction (CBDRR). We will now consider these programmes in more detail.

The government, through the Disaster Management Committee, formulated long term programmes that can be grouped into technical and non-technical. In term of technical programmes, first, the installation of tsunami early warning systems in the tsunami vulnerable areas; and the second, focused on the development of permanent housing and relocation known as 'Rumah Tsunami' as discussed in the previous chapter.

In term of non-technical programmes, first, streamlining structures, mechanisms, and standard operating procedures (in particular, updating NSC Directive No. 20 to include dealing with tsunamis); second, introducing National Platform for Disaster Management that incorporates disaster risk, preparedness, mitigation, response, and rehabilitation in the existing planning and development plans, rules and regulations at each level of government administration involving various stakeholders (Center for Excellence in Disaster Management & Humanitarian Assistance, 2016). This National Platform initiated and supported by the then Deputy Secretary of NSC as he pointed out in an interview on 7th August 2014. The National Platform also streamlines the communication between government agencies, and, between government and vulnerable populations.

Third, the Government also planned to table Disaster Management Bill in the Parliament in 2014 to strengthen the disaster management agencies, such as the power to use appropriate means to evacuate threatened communities, prosecute those responsible for the amplifying the disaster, such as those

undertaking illegal farming, logging and development that contributed to landslides or floods in the particular areas, and empower the vulnerable communities on disaster preparedness (Berita Harian, 2014).

Fourth, the NSC organises and coordinates capacity building in vulnerable communities by, after 2008, adapting the Community Based Disaster Management (CBDM) model from the Asian Disaster Preparedness Centre (ADPC), with the main focus on community based disaster risk reduction activities. In terms of public education and awareness of disaster management, the government launched various programmes such as those by the Ministry of Education(with cooperation from UNESCO) to conduct emergency preparedness programmes for school teachers, declaring 26th December as National Disaster Awareness Day, publishing Public Awareness Guideline on Disasters, and organising public seminars, road shows, and drills. The next section discuss in details the integration of disaster risk reduction into development planning.

Embedding Disaster Mitigation in Development Planning

Malaysia subscribed to international cooperation in reducing disaster risk by adopting the Hyogo Framework for Action (HFA) in November 2005 through the National Disaster and Relief Management Committee Meeting chaired by the Deputy Prime Minister. HFA was launched in Hyogo, Japan on January 2005 during the United Nations World Conference on Disaster Reduction (WCDR). The Asian Conference on Disaster Reduction took place in September 2005 in Beijing, to formulate an implementation plan of HFA for Asian countries.

In an effort to comply with HFA, Malaysia started to implement HFA strategies involving the mainstreaming disaster risk reduction in development policies and planning by establishing a National Platform for Disaster Management, which is a complex guideline to integrate and incorporate disaster risk assessment, preparedness, mitigation, response and recovery into various plan, rules and regulations such as the Malaysian Five Year Development Plan (coordinated by Economic Planning Unit), Spatial Planning Policy, Structure and Local Plans, including disaster risk mapping (managed by the

Town and Country Planning Department), Shoreline Management and Coastal Rehabilitation managed by the Drainage Irrigation Department (DID) and Forestry Department[9]. For example, disaster prevention and mitigation programmes as part of coastal rehabilitation proved to be very effective in reducing the tsunami wave due to mangrove forests acting as natural buffers as in Balik Pulau (Penang) and in contrast to Kuala Muda (Kedah) which lacked mangrove swamps and where the tsunami wave swept inland (Abdullah et al., 2005). Another example of the effectiveness of mangrove forest was that the houses in Padang Slim village (Kedah) were spared by the tsunami because of 50 meters of mangrove swamp. Therefore, the National Disaster and Relief Management Committee decided to intensify coastal vegetation and increased replanting programmes and protecting mangrove forest.

Another aspect of disaster prevention are the Drainage and Irrigation Department's (DID) guidelines on 'set-back' for coastal development. The set-back is a gap of non-development maximum 400 meters from mangrove tree-line for mud beaches and 60 meters for sandy beaches without coastal protection (such as a retention wall). During the 2004 tsunami many houses in Kuala Muda, Kedah would not have been so severely damaged if development had been in compliance with the guideline. Another example is of a government training centre in Pasir Panjang, which was inundated by the tsunami wave because the centre is only 30 meters from the beach (Abdullah et al., 2005). However, this guideline is not practical for Penang due to the scarcity of land and has been opposed by developers. It implies that the mangrove forests were successful in breaking up the tsunami wave, but the 60 meter setback is not suitable for implementation on Penang. However, the setback guidelines could be accompanied by coastal defence systems such as a retention wall. There are a few laws relating to disaster prevention in Malaysia such as the Land Conservation Act 1960, the Environmental Quality Act 1974, the Road, Street, Drainage and Building Act 1974, the Local

[9] Interview conducted with the former Deputy Secretary NSC, Che Moin Omar and the Principal Assistant Secretary, Disaster Management Division of NSC Putrajaya, Norhisham Kamarudin on 7th August 2014 and5th August 2014 respectively.

Government Act 1976, the Occupational Safety and Health Act 1994, and the Uniform Building By-Laws 1984. Before the 2004 tsunami, there were several Standard Operating Procedures (SOPs) on specific types of disaster, such as flood, industrial disasters, forest fire/open burning and haze, oil, gas and petrochemical disasters, that generated the National Contingency Plan for Oil Spill Combat, Drought, Pandemic/ Endemic Preparedness Plans (on revision) (Kamarudin, 2014).

DRR was also embedded in land use planning and development at various stages. This initiative led by the Town and Country Planning Department and implemented through the National Physical Plan (National Level), the Structural Plan (State Level), the Local Plan, and Special Area Plans (Local Level) incorporated zoning for Environmental Sensitive Areas, geo-hazards, natural protection such as mangroves, Integrated Water Resources Management (IWRM), and Integrated Coastal Zone Management (ICZM). The Malaysian '11th Five Year Development Plan' (2016-2020) embodying physical and socio-economic plan, embeds DRR by targeting improvements to the quality of life and promoting sustainable growth in order to achieve Millennium Development Goals (MDG).

Development of the Tsunami Early Warning System

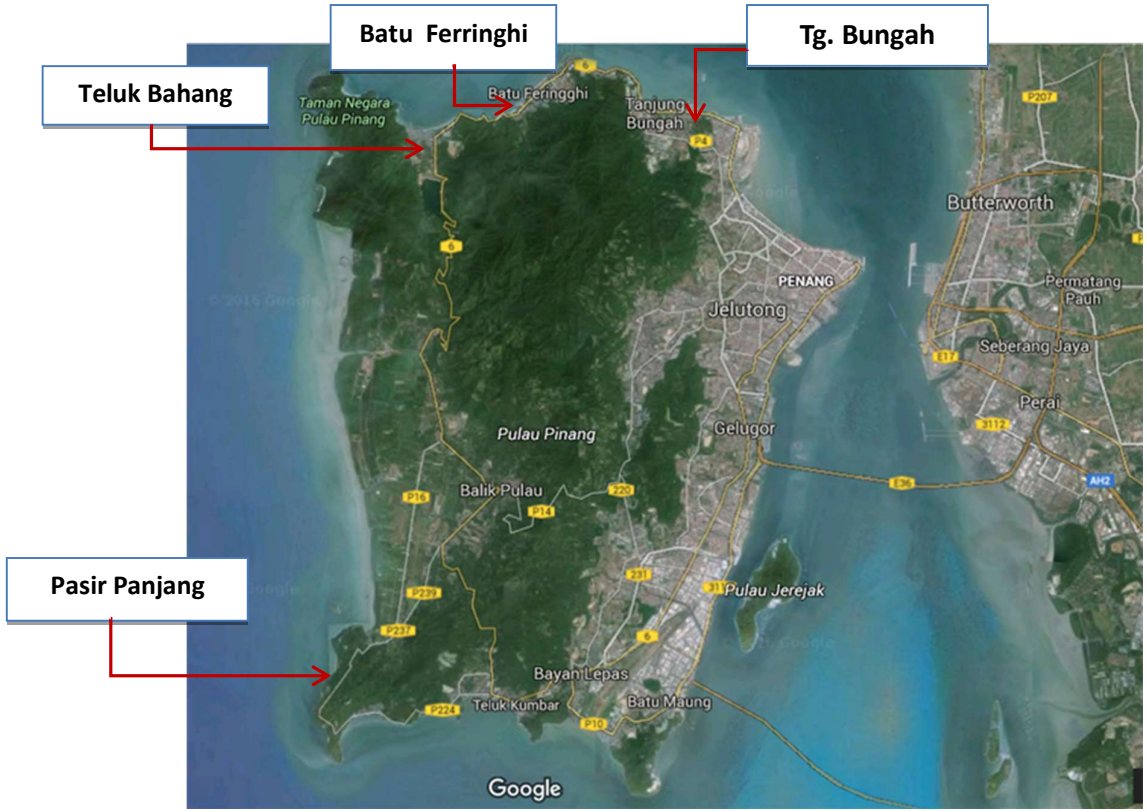
The Disaster Management Committee identified an urgent need to develop a national tsunami early warning system. The resulting Malaysian National Tsunami Early Warning System (MNTEWS) was developed by the Malaysian Meteorological Department to cover near shore areas. MNTEWS consists of three elements: data and information collection, data processing and analysis, and the dissemination of results (these also include a network of tsunami sirens). MTEWS can detect earthquake tremors that may lead to tsunami waves using three buoys installed near Rondo Island in Sumatra (December 2005), Peninjau Island on the South China Sea (March 2006), and near Sipadan Island (August 2010). These disseminate early warnings of tremors through satellites and are received by an earth station in Cyberjaya, then forwarded to the MNTEWS centre at MMD in Petaling Jaya for analysis, followed by announcements in the mass media (especially television), fixed

telephone lines, and Short Messaging System (SMS) to the vulnerable populations within 12 minutes of the first detection of tremors (Umar, 2007).

Tsunami alerts are also sent to disaster management agencies, particularly National Security Council, and first responders (such as police, fire and rescue, medical services, civil defence, marine police, coast guards) and the Welfare Department. As part of the dissemination, 23 tsunami sirens throughout Malaysia, in which 4 of them were built in Penang Island (at Tanjung Bungah, Batu Ferringhi, Teluk Bahang and Pasir Panjang) in 2010 (Figure 6.1) (Saw, 2012). The Malaysian Tsunami Early Warning Systems (MTEWS) is able to detect the possibility of a tsunami whenever an earthquake occurs in Sumatra, the Southern Philippines, or the South China Sea. The MTWES then disseminates the early warning information to the public, in particular to the tsunami vulnerable communities, via various channels such as fixed-line telephones, Government Integrated Radio Network (GIRN), the Malaysia Emergency Response System (MERS) hotline, television, radio and social media (Facebook, Twitter and WhatsApp groups) (Center for Excellence in Disaster Management & Humanitarian Assistance, 2016, p. 46).

According to the Penang State Executive Councillor, Phee Boon Poh, disaster management agencies in Penang conduct tsunami drills and exercises twice a year in order to keep them prepared and educate the public about tsunami emergency response procedures, such as the safest routes to the evacuation centres and their location. The exercises and drills are in accordance with National Security Council (NSC) Directive No. 20, which spells out that the once the Malaysian Meteorological Department (MMD) has detected a credible tsunami threat, it will issue a warning and inform the State Secretary and the Chief Minister of Penang, who then will set up a disaster committee to coordinate an inter-agency response involving police, civil defence, fire and rescue departments, hospitals, local councils, and coast guards. Foreign embassies and consulates will also be notified enabling them to take action and inform their citizens. Police and local council enforcement teams will be immediately mobilised and sent to the tsunami prone areas to keep people

Figure 6.1: Location of Tsunami Sirens in Penang Island, Malaysia.



Source: Adapted from Saw (2012), Imagery from Digital Globe, Google 2016.

away from beaches and urge them go to the nearest evacuation centres (Mok, 2014). However, Councillor Phee notes that there were several cases where the disaster management agencies did not get cooperation from the public during the drills and this hampers the response process. Non-cooperation was partly due to misunderstanding by the public of what procedures to follow in the event of a tsunami, as in the case of 2013 tsunami drills, when the public left their cars on the streets and rushed to Gurney Plaza as soon as they heard the sirens. This caused traffic congestion with many people trapped in the cars. Some coastal residents and business owners (of restaurants, souvenir shops, and tourism services) ignored the sirens and refused to leave their homes and shops because they were afraid of their shops being looted (Mok, 2014). Some people in Penang even went to the beach to find out what was happening (Interview with the former Deputy Secretary of NSC: 7th August 2014). From my observation during the fieldwork, there were no visible signboards with information about tsunami evacuation centres and the safest routes to get there. In their absence the public may be confused and panic because of no clear directions and guidelines on tsunami response and evacuation.

The tsunami drills and exercises in Penang were run by MMD in 2015 at a popular tourist beach of Batu Ferringhi; it started with 15 minutes of tsunami sirens at 12.30pm. The public ignored the alarms and continued their activity as normal. When they were asked why they did not respond to the sirens, they said that they would only run away if they saw a tsunami wave coming (Lee, 2015). This implies that the drills and exercises have not achieved their objective of educating the public about the danger of a tsunami. I argue that this situation also stemmed from false tsunami alarm in 2007 that made the public less confident with the sirens. MMD had technical problems when relaying the message of tsunami in 2007, which caused it to disseminate false information about an earthquake and tsunami that derived from a faulty seismology intranet system and a defective fax machine. The false warning delivered a statement that the devastated tsunami will hit coastal areas in Penang, Kedah and Perlis as a consequence of earthquake in Padang, Sumatera, Indonesia (The Sun Daily, 2007).

I argue that the people in the tsunami vulnerable areas are complacent, thinking of a tsunami as a once in a lifetime event, therefore they do not take the drills seriously, and will only take action when the real tsunami threat happens, thus putting themselves in danger, jeopardising and delaying evacuation efforts leading to loss of life. The impact and consequences on the population would be severe if the first responders did not effectively manage to evacuate the affected people within the time frame before the tsunami wave reached them. I argue that if this scenario took place, the government would most likely be heavily criticised, even though part of the problem is caused by the population's lack of confidence in the early warning systems and the regular drills, exercises and public awareness programmes. However, the political impact of the next tsunami are likely to be less significant than the last incidents in 2004.

Community Based Disaster Risk Reduction (CBDRR)

CBDRR is part of the Community Based Disaster Management (CBDM), multi-agency activities coordinated by the National Security Council started in 2010 in an effort to build local capacity through identifying and minimising disaster risks. Its main objectives were to develop public awareness of disaster risk, create a platform to disseminate disaster information so that vulnerable communities would be better prepared for disasters and creating resilient communities.

Public awareness campaigns were conducted by the National Security Council and the Department of Meteorology in 16 vulnerable locations throughout Malaysia after 2010. In order to evaluate the level of public awareness and effectiveness of the campaigns, 568 questionnaires were completed (Zainal et al., 2011). A majority of participants (60%) were aware of the impact and risk of earthquakes and a tsunami after 2004 and a majority (more than 60%) of participants acquired a basic knowledge of the threat, such as the differences between a tidal wave and a tsunami wave (which is indicated by a sudden retreat of sea and followed by high speed wave) after attending the awareness programme. More than half (53%) of participants obtained their information about the Malaysian Tsunami Early Warning

Systems (MTEWS) through the mass media particularly television; and, more than half are aware of early warning sirens, the location of their evacuation centre, and the actions to be taken in the event of a warning.

Prior to the 2004 tsunami, the awareness programmes focused on flooding since this is the most common disaster in Malaysia, in particular the monsoon floods that occur every year between November and February. The population in the coastal areas had no knowledge of a tsunami and its impact. Since 2006, the NSC has organized series of public education and awareness campaigns on earthquakes and tsunamis in collaboration with other agencies such as the Malaysian Meteorology Department (MMD), the Drainage and Irrigation Department (DID), and the Town and Country Planning Department (TCPD). In 2007, the awareness programme changed to The Public Awareness Campaign on Earthquake, Tsunami and Extreme Weather Hazards, which takes place annually, and is focused on the earthquake and tsunami prone areas in East Sabah and the North West Peninsular of Malaysia. Until 2010, the awareness campaign took place in 35 locations and involved more than 5,000 participants and included the vulnerable population, representatives of NGO's, private companies, and the media. The most important objective of the awareness campaigns was that people understood the danger of a tsunami and could recognise the tsunami siren and evacuate safely (Rahman, 2012).

In order to get information on the effectiveness of government awareness programmes, 1,600 questionnaire forms were distributed to participants at 16 locations in Penang; Teluk Bahang (18), Sg. Burong (31) and Penaga (13), where 568 forms were completed (Zainal et al., 2011). Participants were from vulnerable populations in coastal areas, village heads, and disaster management agencies officials. The main objectives were to assess participant's knowledge, their awareness level of the tsunami sirens, the extent of dissemination of earthquake and tsunami information, and comments on the awareness programme. A very high majority (91%) had a basic knowledge, 47% gained it from television, and 31% from newspapers, and magazines (13%) (Zainal et al., 2011). In terms of disaster risk, 67% of

participants pointed out that they had learned about the risks as a result of attending the awareness programmes. However, only 33% of participants had experienced, or observed, the tsunami wave but of these a majority (67%) only saw the tsunami in television coverage (Zainal et al., 2011). With regards to the development of MNTEWS, 64% of participants were aware of it, of these 53% obtained their knowledge through television. Television played a crucial role in providing updates on earthquakes, and 50% acknowledged television as their main means of acquiring information, radio (25%), friends (12%) and SMS (9%). The most influential television networks were Radio Television Malaysia (RTM) with 40% viewer, followed by TV3 (37%), Astro (9%), NTV7 (5%), TV9 (5%) and 8TV (4%).

The awareness programmes achieved one of its main objectives(to educate participants about early warning), with 56% knowing how to respond, 60% knowing what to do when they heard the tsunami siren, and 56% knowing they have to go higher place away from the beach and wait for agencies to guide them to the evacuation centre. The NSC and MMD claimed that the disaster management officials who attended the awareness programmes had adequate knowledge of how to respond according to NSC Directive No. 20 (Zainal et al., 2011).

My research sample confirmed the findings of Zainal et. al. 82% of my respondents pointed out that there was no warning before the tsunami struck their areas (Figure 6.2). Another 14% claimed there was a warning with majority of them (64%) identifying verbal command and instructions from police to go to the evacuation centres and 18% received warning from police and civil defence loud speakers (Figure 6.3). However, one-third or 35% did not understand the warnings, all of them were Indian, and this was the result of a language barrier because the instruction from police was given in Malay, of 65% who claimed understand the command and instruction, all were Malays. However, the level of understanding among respondents has dramatically increased over the 10 years since the tsunami, in which 94% stated that they will go to higher ground as compared to only 25% in 2004 (Figure 6.4). In terms of the tsunami siren, 96% claimed that they are still

learning about it and 4% still did not understand it, a majority of them are from the older

Figure 6.2: Tsunami Warning from Government Agencies during the Tsunami

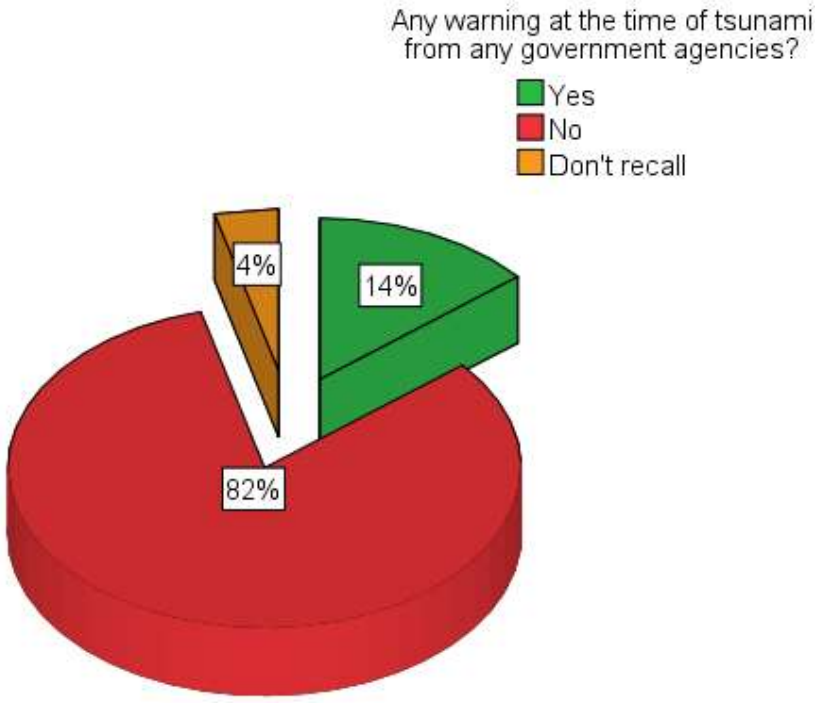


Figure 6.3: Type of Tsunami Warning

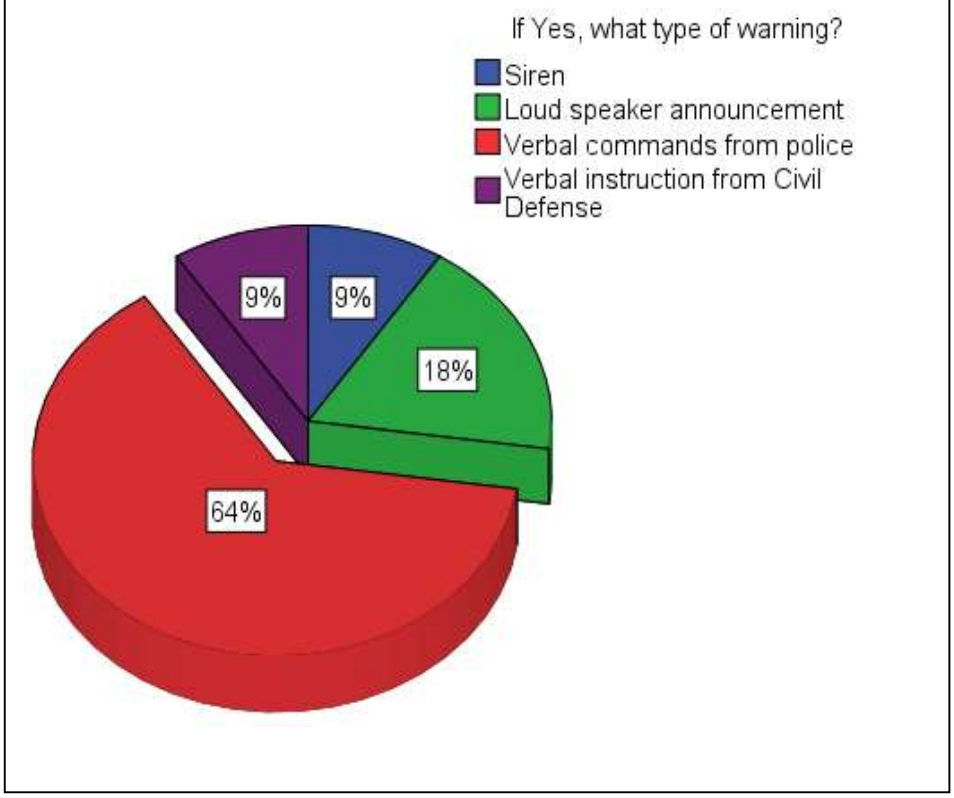
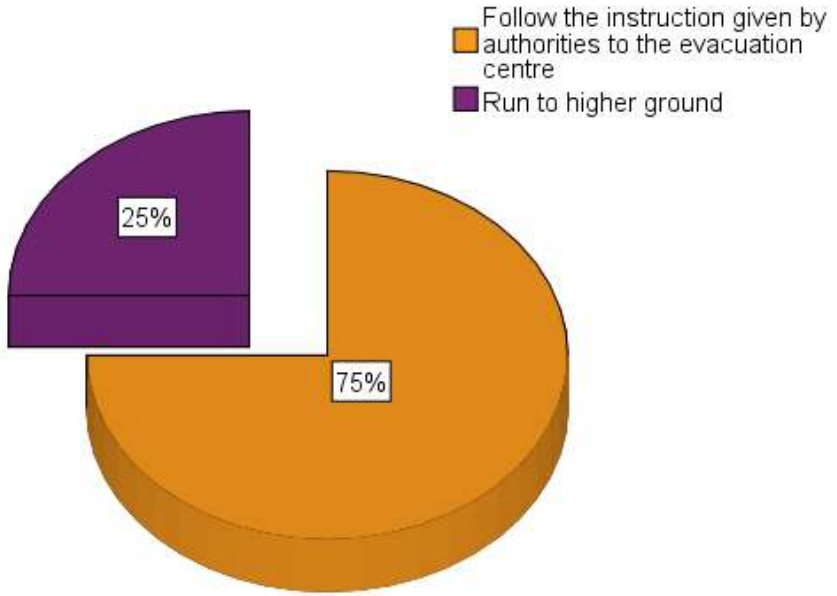
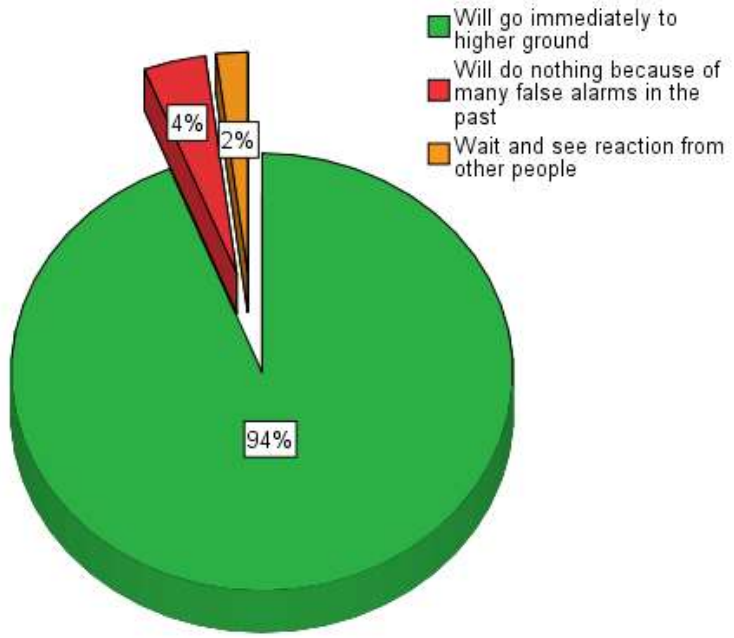


Figure 6.4: Comparison of Action Taken by Respondent to the Tsunami Warning during 2004 Tsunami and 10 Years After Tsunami



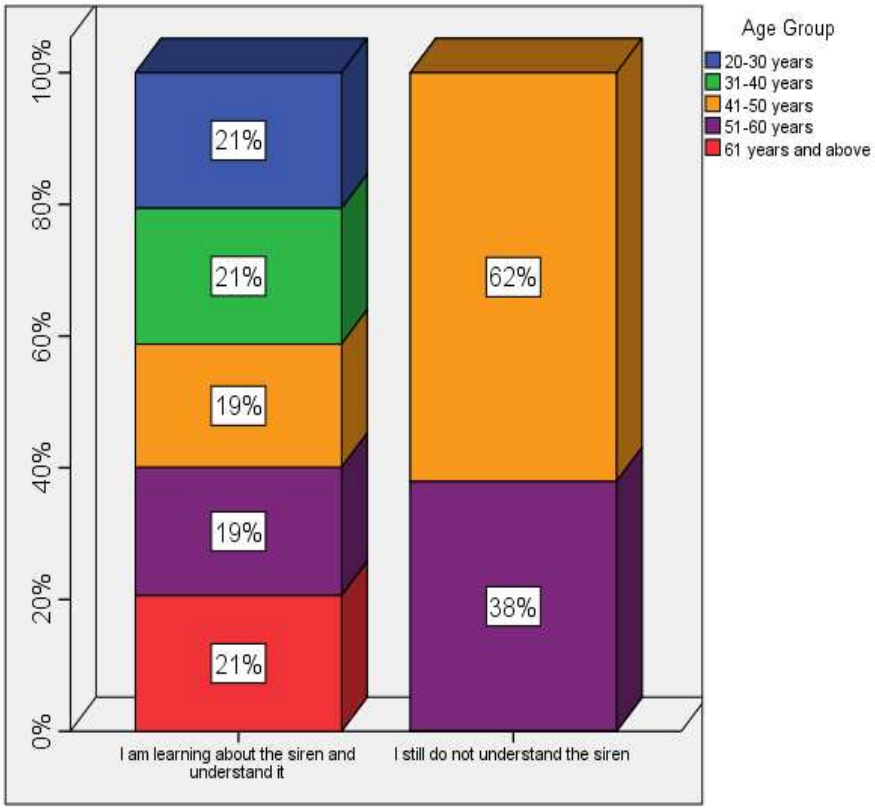
During 2004 Tsunami



10 Years After Tsunami

generation, age between 41 to 50 (62%) and 51 to 60 (38%) as compared to 42% younger generation age between 20 to 40 (Figure 6.5).

Figure 6.5: Level of Understanding after 10 Years of Tsunami

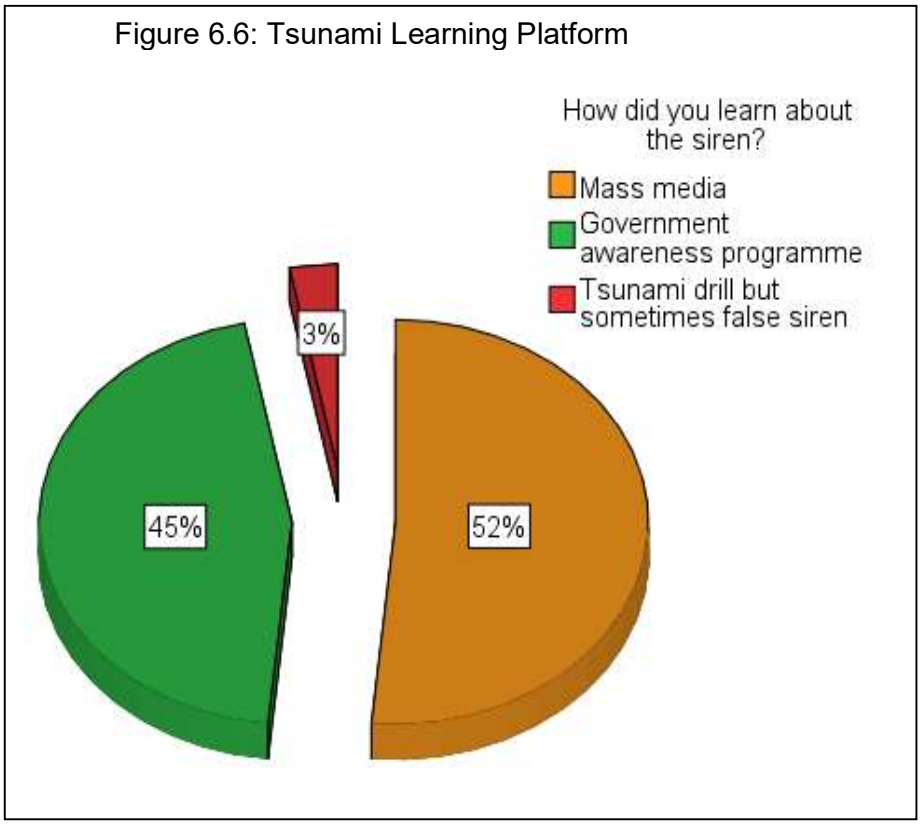


Age is important in determining the level of understanding. The younger generation are better exposed to a wide range to information about the tsunami threat, particularly through the internet. With regards to knowledge of evacuation plans, 80% of my sample knows the tsunami evacuation plan, which includes emergency routes and the location of the evacuation centres. However, 20% of respondents had no knowledge , and a majority of them are in the middle age group between 31 to 50 years old (84%), claiming that they have heard about evacuation plan but never receive further information about it. This suggests that government agencies should expand disaster outreach programmes to every aspect of demographic profile, focusing on age.

In general, 54% of my sample was confident of government's preparedness programmes to manage another tsunami and 46% are very confident. In terms of the awareness level of the tsunami threat after 2004, 90% of

respondents stated that they understand the dangers. However, 10% were still unsure, which consists of a near majority of business owners (49%) and 41% are private sector employees. In terms of the relationship between the level of education and method of acquiring information about tsunami threats (as shown in Figure 6.6 and 6.7); out of 52% who learned from television and

Figure 6.6: Tsunami Learning Platform



internet, 84% of them have secondary level of education. Meanwhile, out of 45% who gained knowledge about the tsunami from the government's awareness programmes, 73% of them have primary school level of education. This suggests primary school leavers' respondents prefer receiving direct information from the government. With regards to the type of communication influences the respondents, the majority of the sample identified television (33%) and information delivered during government awareness programmes (30%), and only 15% mentioned the siren (Figure 6.8).

Further analysis by age group revealed that 75% of middle age group (41 to 50 years) relied on television, 67% of younger generation (20 to 30 years)

Figure 6.7: Tsunami Learning Platform by Education Level

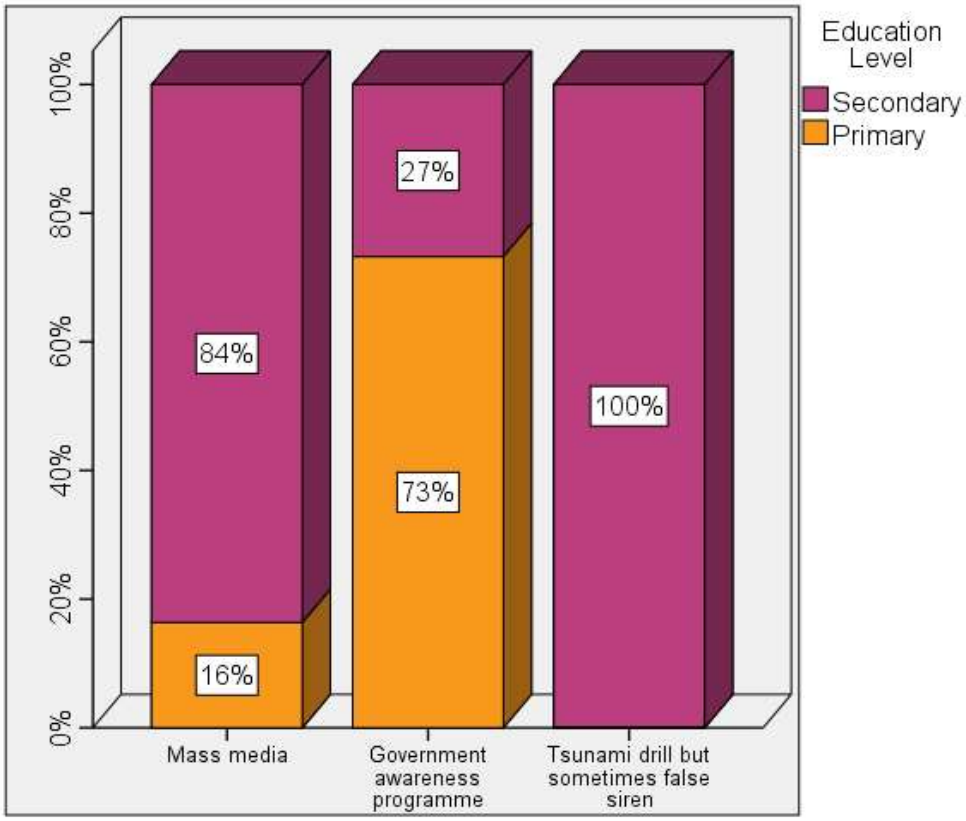
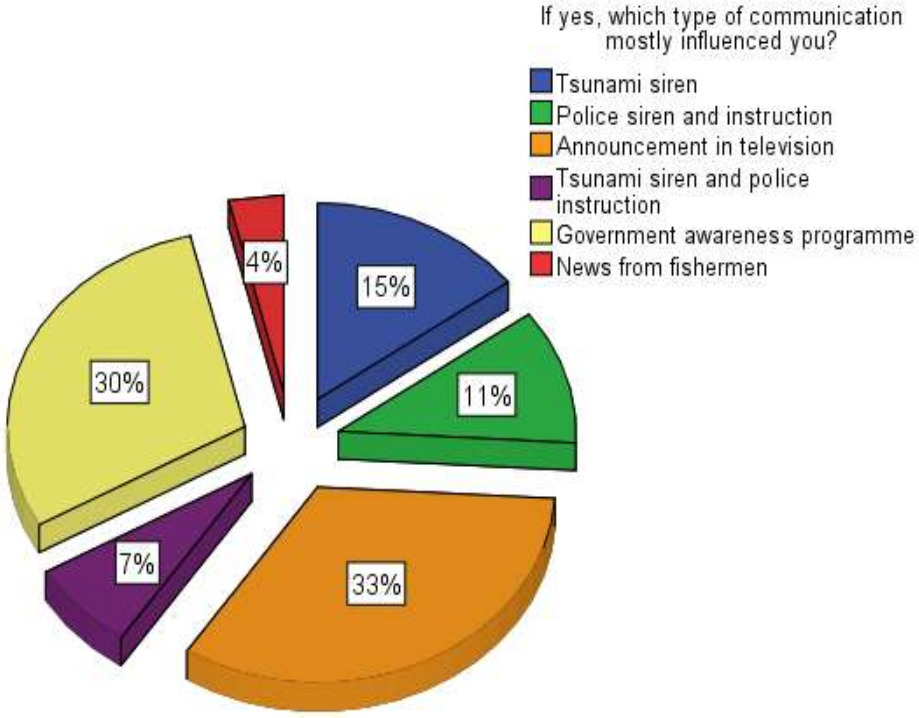


Figure 6.8: Type of Communication Mostly Influenced Respondent



depend on the siren and police instruction, and 50% of the older generation (61 years and above) identified the siren as the main warning.

These results suggested that television and government awareness programmes are the most influential source of information (Figure 6.9). 42% of my sample were satisfied with the early warning systems (Figure 6.10) but 68% made several suggestions as to how to improve the systems, such as more tsunami drills (8%), the tsunami siren must be louder and clearer (8%), but 30% gave "no comment". This maybe because, for example, they were not sure, lacked information, or were afraid to voice any comment due to suspicion of the researcher as a government's agent (staff from disaster management agencies). These low levels of satisfaction, remember, ignited frustration and anger towards government and the ruling party. The NSC, as the coordinating body for disaster management in Malaysia, faced major challenges in dealing with a new type of disaster because of the current standard operating procedures that spell out among others, flowcharts of specific disaster response, which includes roles and responsibilities of disaster management agencies such as Police, Fire and Rescue Department, Marine Police, Coast Guards, Welfare Department and medical services that did not cover a tsunami.

In the light of the 2004 tsunami, disaster management mechanisms and structures as laid down in Directive No. 20 were not clearly presented on the scene of tsunami events especially in Penang. This, perhaps, accounted for the delay in providing immediate response to the affected people. This argument is corroborated by the NSC Secretary (the then the Chief of Staff to the then Prime Minister Abdullah Badawi) during an interview on 7th August 2014. He claimed he accompanied Prime Minister Abdullah during the visit to the affected areas, after the Prime Minister shortened his holiday in Europe and immediately returned to Malaysia (his flight landed directly at Penang International Airport). There was no NSC official around the visit and in fact he described the NSC as not being in the picture (there was no clear mechanism or structure of disaster management), and the tsunami relief was administered

Figure 6.9: Type of Communication Mostly Influenced Respondent by Age Group

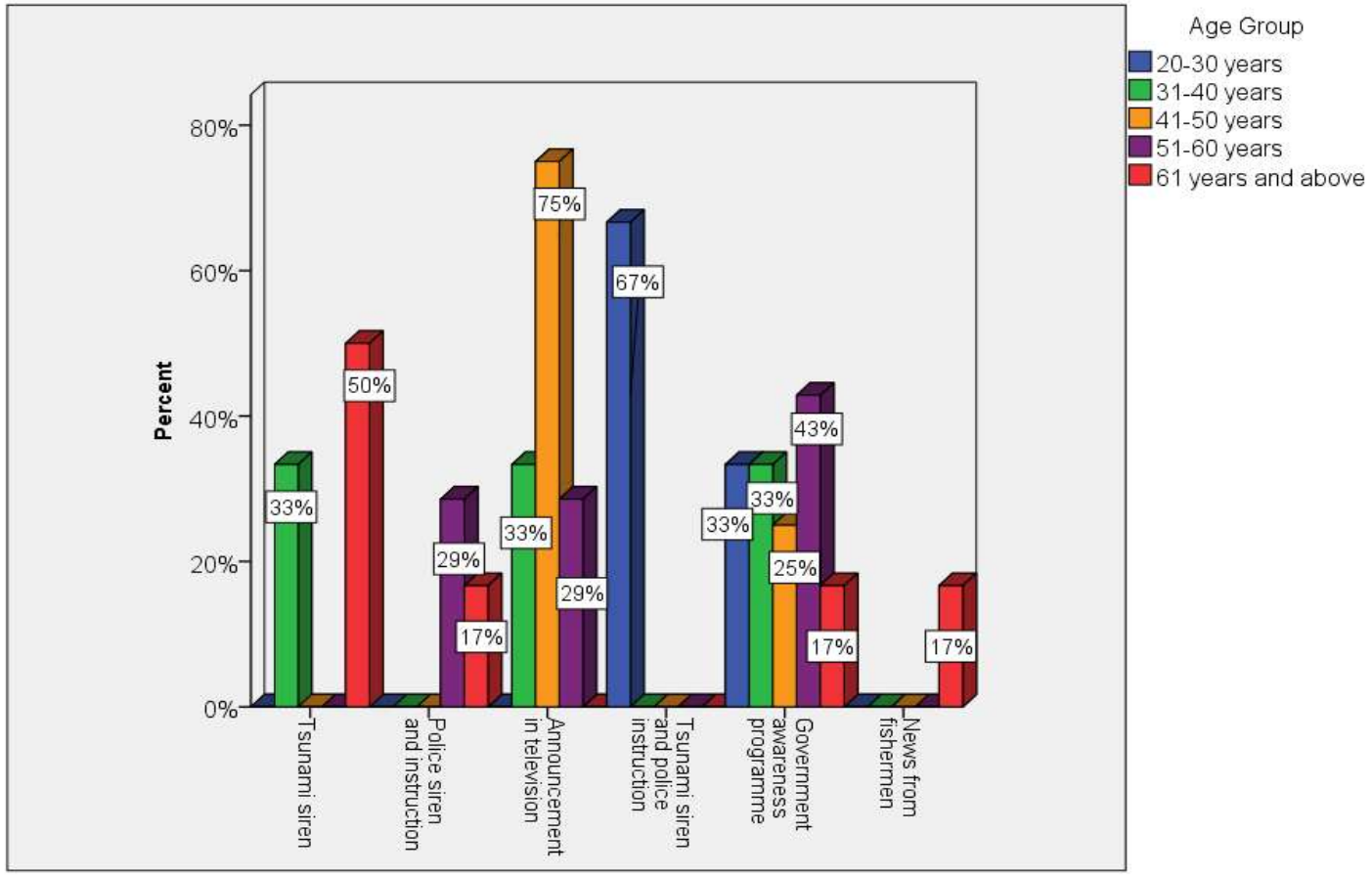
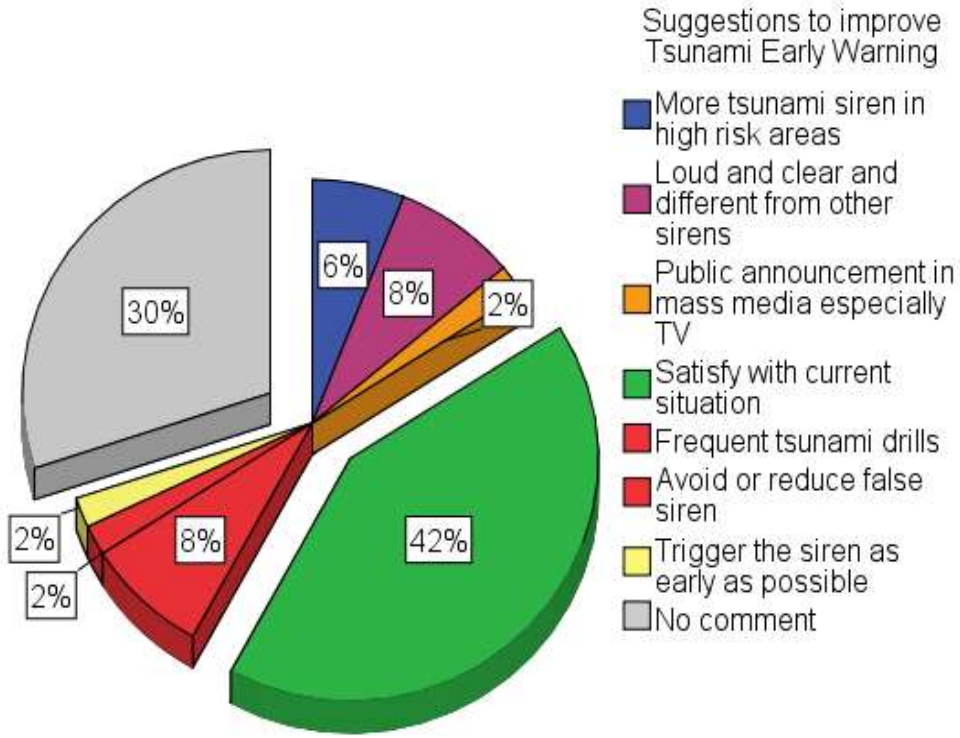


Figure 6.10: Suggestions to Improve Tsunami Early Warning System



directly from the Prime Minister's office. The then NSC Secretary lost his post in 2005, in part because he was associated with the poor performance of NSC in the early stages of the response to the tsunami.

An effective tsunami response systems is constituted of well prepared, efficient disaster management agencies and educated and knowledgeable publics that act accordingly when they hear tsunami sirens (Ho, 2007). However, due to the rarity and low possibility of a tsunami strike, the Malaysian population in general are complacent and do not pay serious attention to the tsunami sirens. Even in the most exposed and experienced country with regard to tsunamis, such as Japan which holds frequent tsunami exercises and drills, many Japanese were still trapped on the road because many of them tried to escape by car when tsunami hit the eastern Japan in Fukushima in March 2011. This implies that tsunami preparedness requires extended, repeated, comprehensive and integrated efforts from every government agency, civil societies, and full cooperation from individuals to be alert, prepared and take action altruistically (Hamzah, 2012). To achieve this, the tsunami warning siren should be loud and clear, and a unique sound, so people will be able to differentiate it from police and ambulance or other emergency warnings. Followed by announcement by loud speaker by police asking the public to cooperate and follow the evacuation routes within a maximum evacuation time. The sequence of action to be taken by the affected population should be understandable with simple explanation by picture or graphics placed on information board in public areas. The routes to evacuation centres must be clearly marked and the evacuation and relief centres made known to public, the chain of command among disaster management agencies should be swift and efficient (Yasin, 2009).

Amendments of the NSC Directive No. 20

NSC Directive No. 20, is the executive order signed by the Prime Minister to be served as the main document that outlines the structures and mechanisms for disaster management in Malaysia. It is the government's effort to coordinate disaster response based on level of administration (district, state and federal) and seriousness of the disasters. In the aftermath of the 2004 tsunami, the government realised the urgent need to revise the NSC No. 20 to

reflect the new types of disaster and respond to the affected people's reaction that blamed the disaster management agencies, for their late arrival after the tsunami. The amendment gave the Malaysia Meteorology Department (MMD) an important role for the development and deployment of the Malaysian Tsunami Early Warning Systems. MMD has given the task of detecting, analysing and disseminating information regarding the tsunami warning to disaster management agencies and the public, in particular to the vulnerable populations.

The amendment take into account the need to enhance and build the capacity of the public to be self-resilience by reinforcing roles and responsibility of the Civil Defense Department (Jabatan Pertahanan Awam Malaysia-JPAM) and the People's Volunteer Corps (Sukarelawan Rakyat Malaysia-RELA) . The Government encouraged the population, in particular people living in disaster-prone areas to register and join either JPAM or RELA because both are voluntary managed by communities, as suggested by the literature (see Chapter 2) a close-knit community with established volunteer group or force is far more resilient because the community is able to response, cope and recover from disaster quickly without waiting for external assistance. To further enhance resilience and reduce vulnerability, the NSC required the conducting Community-Based Disaster Risk Reduction programmes, which the NSC coordinated with the MMD, the Town and Country Planning Department, District Office, and other relevant agencies. The new Standard Operating Procedures (SOP's) for a tsunami also formulated in order to compliment the new amendment. This is discussed in the next section.

New Standard Operating Procedures (SOP's) for Tsunami

The new SOP's for tsunami were developed in order to streamline the mechanism, procedures, command and control of tsunami response. Its main objective is to ensure an efficient and effective response that concentrates on the response time (arriving time of first responder's agencies such as fire and rescue, civil defense and medical services), on seamless evacuation processes to the temporary shelters and immediate access to basic needs such as clean water, food and clothing for the affected people. The SOP's

spell out the roles and responsibilities of agencies, such as NSC (later replaced by National Disaster Management Agency-NADMA since 2015) as the main coordinator, Police as the incident commander and public order, Fire & Rescue Department as the coordinator for first responders, the Welfare Department as coordinator for temporary shelters, and the Department of Information for liaising with the media. The Department of Meteorology provides early warning of a potential incoming tsunami based on analysis of the integrated Malaysian Tsunami Early Warning System (MTEWS) that gather data from buoys floating on Andaman Sea and South China Sea.

At the regional level (South East Asia), the government's disaster management agencies led by NSC (taken over by NADMA in 2015) enhance cooperation with neighbouring countries; Indonesia, Thailand, Singapore, Brunei and The Philippines in providing tsunami early warning information through ASEAN (Association of South East Asia Nation) platform. Regular preparedness and response training conducted within ASEAN framework for disaster risk reduction with external expertise from Japan and USA (Pacific Tsunami Early Warning Centre). The main components of the training and exercise are creating awareness among agencies' officials and disaster-prone communities to be alert on tsunami warning siren and standard operating procedures (SOP's) for efficient and effective response.

A New Disaster Management Bill

To further strengthen disaster management in Malaysia, the government started after 2010 discussions and engagement with relevant agencies, stakeholders and the public (in particular the disaster vulnerable communities) with the idea of formulating a new Disaster Management Bill after to replace executive order of NSC Directive No.20 . The objective, among others, is to tackle issues regarding the evacuation that provide the legal provision to the NSC to enforce compulsory evacuation of vulnerable and potentially affected people to temporary shelters. However, this new Act was disapproved by opposition political parties and human rights NGO's on the basis of human rights and civil liberties. Opposition parties and NGO's believe the probability is that the agencies concerned (particularly NSC) will act beyond their

mandate or abuse their power in managing the evacuation process. Based on my experience as the Director of NSC State of Penang Office, I suggest that the legal provision for mandatory evacuation or resettlement of disaster vulnerable communities is highly practical and necessary that volunteer evacuation faces the problem of securing cooperation from the affected people because many do not believe in early warning until they see the disaster by which time it is too late to evacuate. This situation puts the government in a dilemma on whether to force them to evacuate or leave them to face the disaster. This dilemma put the discussion of the Bill on stagnant without any progress until today.

However, recently the government has initiated a new law in order to overcome this deadlock by introducing National Security Council (NSC) Act (2016). The Act passed with simple majority after heated debate and strong opposition by the opposition parties. The NSC Act provide legal provision for the NSC to declare an “emergency area” in the disaster affected areas and for the military to take part in the response and evacuation process and the Federal government are able to speed up delivering aid. I argue, based on my experience as a civil servant, NSC Act can be viewed as a two-edge sword because the definition of “emergency areas” is prerogative of the authority (in this case, the NSC) that could be leading to *ultra-virus* or abuse of power. To do this I propose that the NSC should develop a clear criteria for an emergency declaration.

A New National Disaster Management Agency (NADMA)

As a long term initiative to beef up disaster management in Malaysia, the government established National Disaster Management Agency (NADMA) on 31st December 2015, a new agency in the Prime Minister’s Department. Government realises the weaknesses of previous disaster management structure and mechanism, in particular during the 2004 tsunami is preparedness and mitigation aspects as portrayed by my research sample and supported by elite interviews and triangulated using reports in the mass media regarding the unpreparedness of agencies’ concern. Therefore, the government decided to set up specific agency dealing with disaster

management that gave birth to NADMA whose main functions are: first, as a national focal point of disaster management at district, state, national, regional and international level. Second, to formulate disaster management policies, strategies, directives and action plans; third, to monitor and perform auditing on disaster management agencies for continuous improvement; fourth, to manage deployment of SMART (Special Malaysia Disaster Assistance and Rescue Team) previously under the purview of NSC since 1994 when disaster strike. Fifth, to manage KWABBN (and disseminate immediate 'Wang Ehsan' (compassionate money) and long term monetary aid (for repairing or rebuilding damaged houses) to affected people. Sixth, to coordinate disaster management exercises and drills for officials and communities through Community Based Disaster Risk Reduction (CBDRR) initiatives. Seventh, to coordinate external disaster and humanitarian aid from regional and international agencies (NADMA, 2017).

This new set up is an expansion of the Disaster Management Division of the National Security Council. The main purpose of creating NADMA is to separate the disaster management function from NSC so that NSC will focus only on national security issues and NADMA concentrates on managing disaster for better and more effective preparedness, mitigation, response, and rehabilitation. NADMA has been operating at full capacity only since 1st January 2016 and has effectively in managed several monsoon floods (Utusan Online, 2016).

Conclusion

Malaysia is exposed to natural disasters and the 2004 tsunami had a transformative effect. Disaster management structures and mechanism were streamlined to offer an integrated and holistic approach in order to face new challenges and better respond to them. This requires reviewing and harmonising current disaster management related laws, regulations and policies that are segregated in nature. Malaysia also has several specialist mechanisms to handle different type of disasters, Malaysia also created an institutionalised National Platform for Disaster Risk Reduction in 2013 (as part of Hyogo Framework requirement). This was part of the effort to "bring

together government agencies and private sectors into one platform for a better coordination". (Center for Excellence in Disaster Management & Humanitarian Assistance, 2016, p. 68).

In summary, the Government of Malaysia adopted a two-pronged adaptation strategy to meet the tsunami affected peoples' expectations and discontent at the weaknesses of response and recovery. First, strengthening structure and mechanism of disaster management by reviewing existing establishment and procedures as stated NSC Directive No. 20. The government embedded disaster risk reduction strategies in development planning, in which new physical development and land use must comply with a strict development control and regulation, such as preserving environmental sensitive areas. In light of 2004 tsunami, the government developed the National Tsunami Early Warning Systems. NSC Directive No. 20 was also amended and new SOP's for a tsunami were formulated to enhance the response. A new agency, NADMA established in 2015, specialises in disaster management and a new Disaster Management Bill has been debated in Parliament. Second, the government has engaged communities by building capacity for self-resilient through Community Based Disaster Risk Reduction (CBDRR) programmes. CBDRR emphasises creating and inculcating awareness, preparedness and mitigation culture amongst the public, in particular to those living in the disaster vulnerable areas. The main objective is to reinforce the resilience of communities in the event of disaster. The final Chapter is the concluding chapter that provides overview of research objectives, questions and its answers and summarising this dissertation.

Chapter 7: Conclusion

Introduction

This dissertation has examined the unprecedented impact of the 2004 tsunami on disaster management in Malaysia, an event that transformed the structure, mechanism and procedures of disaster management To summarise, Chapter 1 provides the background for the research,. A suitable methodology is the mix-methods approach, using a case study approach, because the impact of disaster is *localised, case based, and context specific*. In order to understand disaster and the underlying concepts of risk, vulnerability, resilience and their impact on government and local politics, Chapter 2 discusses the existing literature and provides definitions of key concepts.

Chapter 2 develops these concepts further and focuses on the effects of the disaster on local politics. It is sensible and logical to assume that frustration and dissatisfaction regarding the tsunami response, relief efforts, and recovery programmes triggered a shift in local politics, in the case study areas. Chapter 3 discusses the government's disaster management policies and the response after the tsunami. The government introduced various response and rehabilitation programmes that failed to satisfy many of the affected people and so Chapter 4 focuses on the affected communities' reaction to the government's programmes. The evidence demonstrates reaction to government responses to the 2004 tsunami, which were perceived by the population as late and biased towards certain groups, and with an element of mismanagement. The reaction of the population can be summarized as anger, discontent, and disappointment. Chapter 5 then examines the political effects (limited to the case study areas only) of the government agencies' perceived inefficiency in responding to tsunami. The communities channeled this resentment through elections that led to political shifts (from the ruling party to the opposition) for the first time in 39 years. From the government's perspective, this resentment led the government to embrace transformative adaptation, which is discussed in detail in Chapter 6.

Chapter 6 examines the transformative adaptation initiated by the government. The government accommodated by formulating various new measures, such as the amendment of NSC Directive No. 20, new SOP's for a tsunami disaster, a new policy requiring development planning take into consideration of disaster risk reduction (such as strict building codes and regulation pertaining the development of environmental sensitive areas) , new Malaysia Tsunami Early Warning Systems (MTEWS), new disaster awareness and education programmes, and activities such as Community Based Disaster Risk Reduction (CBDRR) that focus on educating and empowering local communities in managing disaster, 26th December was declared as a Disaster Awareness Day, and eventually, and a new National Disaster Management Agency (NADMA) was created and new Disaster Management Bill was passed by Parliament. Chapter 7 reviews the research objectives, its corresponding questions and its answers or research findings.

The Research Questions

The research objectives and questions are given in Chapter 1. Table 7.1 shows the relationship between research objectives, research questions and results. The general aim of research is to explore how natural disasters can trigger transformative change. The dissertation has three objectives and three questions

The first objective explores the tsunami as an unprecedented event that placed great stress on the government's response and recovery programmes. Did the tsunami act as triggering factor that influenced the government to transform disaster management structures, mechanisms, policy and procedures in order to rectify the weaknesses perceived by the affected communities after the Tsunami? The question is

Table 7.1: Matrix of Research Objectives, Research Questions and its Answers.

Research Objective	Research Question	Answers/Findings
First Objective: To explore the tsunami as an unprecedented event that place stress on the government's disaster management machineries.	**First Question:** How did the government respond to the 2004 tsunami?	The majority of tsunami affected voters (50%) described that the government respond to the tsunami was slow and arrived late and 4% perceived no coordination among agencies. 200 affected people sent a petition setting out their dissatisfaction on the management of the tsunami rehabilitation programmes to the Penang State government (BN). Allegations of nepotism, cronyism and favouritism as perceived by 60% of the sample.

Table 7.1 (cont.): Matrix of Research Objectives, Research Questions and its Answers.

Research Objective	Research Question	Answers/Findings
Second Objective: To examine affected population's feedback and reaction towards government's response and recovery programmes, and indirect effects to the local politics.	**Second Question:** Is there any evidence of a high level of population frustration and dissatisfaction towards the three main programmes:- c) Distribution of 'Wang Ehsan' (Emergency Monetary Aid); d) Allocation of 'Rumah Tsunami' (Tsunami Housing Scheme); and, c) Distribution of fisheries assistance.	91% of affected voters who received 'Wang Ehsan' voiced out that the money was not enough. 70% respondents complained that the 'tsunami houses' were distributed very late and the process was slow. Affected voters who received 'fisheries assistance' (RM 1,000 in financial assistance for repairing their boats and RM 3,000 to buy new boats) claimed that the money was not enough to repair their boats and fishing equipment. 85% stated that the government's failed in response and recovery programmes influenced them to vote for opposition in 2008. 70% of the sample described their voting as a 'protest vote'. Seats won by opposition drastically increased from only 2 seats (2004) to 29 seats (2008) as contrast to seats won by BN decreased from 38 (2004) to 11 (2008). Popular vote for opposition in Penang keep increasing from 36.7% (2004), 58.9% (2008) and 67.8% (2013).

Table 7.1 (cont.): Matrix of Research Objectives, Research Questions and its Answers.

Research Objective	Research Question	Answers/Findings
Third Objective: To examine the tsunami as the trigger for the transformation of disaster management structure and mechanism in Malaysia.	**Third Question:** Is there any evidence that the 2004 tsunami triggered a transformative adaptation to the disaster management mechanism?	The transformative adaptation in managing disaster is triggered by the interaction between the government's response to disaster (2004 tsunami) and the affected population's reaction that lead to structural and mechanism transformation such as amendment of NSC Directive No. 20 to include detail definition of tsunami, new SOP's for tsunami that spell out roles and responsibilities of agencies' concern, embedding disaster risk reduction strategies in development planning, shift the focus from response to preparedness through awareness and education, development of Malaysian Tsunami Early Warning System; and in a longer term, expansion of Disaster Management Division of NSC into a new agency dedicated for disaster management, National Disaster Management Agency (NADMA) and formulation of Disaster Management Bill.

centred on the effectiveness of the government's response to the 2004 tsunami and the reaction of the affected population. The evidence from the fieldwork (Chapter 4) indicates that the majority of tsunami affected voters perceived the government's response as slow and late, and often with little coordination. With regards to distribution of monetary assistance (Wang Ehsan), 91% of affected voters who received 'Wang Ehsan' believed the money allocated was insufficient. In terms of the tsunami housing programme, 70% respondents complained that the houses were distributed very late and the process was slow. Affected fishermen (25% out of 68% who received 'fisheries assistance') claimed that the money was not enough to repair their boats and fishing equipment. Of the 68% who received fisheries and agricultural assistance, 25% were not satisfied because the amount was insufficient. About 200 affected people submitted a petition setting out their dissatisfaction on the management of the tsunami rehabilitation programmes to the Penang State government. However, the petition did not have any visible effect (Horton et al., 2008).

The second objective is to examine the extent of dissatisfaction and frustration of the affected people with the government's response and recovery programmes and how this led to the change in the government's disaster management policy. The corresponding question concentrates on the discontent and resentment of local communities with the government that acted as a manifestation of wider and pre-existing social tensions. The fieldwork found that 85% of respondents stated that the government's failure in their response and recovery programmes influenced them to vote for the opposition in 2008. Nepotism, cronyism and favouritism were identified by 60% of the sample.

The third research objective is to examine the tsunami as the trigger for the transformation of disaster management in Malaysia. Is there any evidence that the 2004 tsunami triggered a transformative adaptation to the disaster management mechanism? The transformative adaptation in managing disaster was triggered by the interaction between the government's response

to disaster (2004 tsunami) and the affected population's reaction that lead to changes such as the amendment of NSC Directive No. 20 to include tsunami, new SOP's for tsunami that spell out roles and responsibilities of agencies' concern, embedding disaster risk reduction strategies in development planning, shift the focus from response to preparedness through awareness and education, development of Malaysian Tsunami Early Warning System; and in the longer term, the expansion of Disaster Management Division of NSC into a new agency dedicated for disaster management, National Disaster Management Agency (NADMA), and the formulation of Disaster Management Bill. This degree of change can be described as transformatory.

Impact on Government and Local Politics

Disasters, the government's response, and local politics are inter-related as disasters produce discontent over government response and recovery efforts that may lead to political turmoil. Much of the current literature suggests that the impact of a disaster on government and local politics often depends on the pre-disaster political, social and economic condition of the affected population. This includes the resilience of a state's institutions to crisis, as portrayed by examples from the United States, Germany, Turkey, Pakistan and Haiti. The pre-disaster conditions exacerbate the aftermath if disaster occurs in conflicted areas, where natural disasters often become catalysts of political tension in those states already prone to political tensions. Where disasters are unpredicted or previously not experienced (as was the case with the 2004 tsunami) the effect on the government and politics can be even greater because preparations may be ineffective as they were designed for a different types of event. In 'routine emergencies' (such as floods), government's disaster management agencies tend to perform effectively due to their familiarity with this type disaster. However, Samuels argues that "novel emergencies, demand 'adaptive leadership' to respond across key functions: communications, coordination and resources allocation" (p. 9). Disasters are therefore stress factors and may trigger transformative change. This research explores the complex interaction of a disaster and a potential transformation

that take place in response to the affected communities reactions and feedback on the government's capability to manage disasters.

The main attributes that the literature suggests are (Chapter 2): first, disasters, place pressure on government's response machinery and the reaction of the population depends on the pre-disaster's state of affairs in the affected communities. Second, the element of risk that constitutes the vulnerability and resilience of the affected population and the resilience of political institutions plays a crucial role in determining the impact of a disaster. Third, transformative change and adaptation can be differentiated from incremental change, the former takes place rapidly and brings substantial change, whereas the latter happens at a gradual pace with fewer immediately observable effects. In this respect, the changes in Malaysian disaster management took place swiftly from 1997 to 2012 with significant outcomes, such as amendment of NSC Directive No.20, new SOP's for Tsunami, a new Tsunami Early Warning System, and drastic change in policy that extend DRR into development planning, increasing of DRR awareness and education programmes, setting up the National Disaster Management Agency (NADMA), and a Disaster Management Bill.

In essence, a disaster is a product of interactions between natural hazards and human activities in populated areas. The disaster risk depends on the probability and vulnerability level of the area and community and this consists of political, social, economy and geo-physical conditions. Therefore, risk, as suggested by the literature, can be summarised as orienting around the function of disaster probability and community vulnerability. In Penang, my case study shows that the vulnerability levels were potentially quite high due to factors such as communal politics and ethnic segregation that lead to ethnic tensions and possible conflicts. This produced 'disaster state' conditions that are sensitive to unexpected events (such as the tsunami) that tests the ability of government and community to respond. The Penang case revealed ethnic preferences and bias in the response and recovery programmes, as perceived by the affected population that believed the government was giving priority to certain ethnic and political groups. This led to accusation of nepotism, cronyism and mismanagement of relief fund.

The existing disaster management structure and mechanism in Malaysia was designed to manage 'traditional' natural disasters, in particular monsoon flooding. Institutions were not prepared for an unusual and unprecedented disaster such as tsunami. Therefore, the response was often late and uncoordinated (Chapter 3). The reaction of the affected people is conceptualised as depending on the complex interaction of politics, socio-economic conditions, demography, and environmental insecurity. The case studies demonstrate a vulnerable community, characterised by conditions of political and social tension, high urbanisation rate, and a pluralistic society (multi-ethnic, cultural, multi-language, and multi-religion) but one that is socially and geographically segregated and then subjected to a major natural disaster.

Tsunami related issues that underpin the frustration and dissatisfaction of affected communities werebased on three government's programmes (coordinated by NSC); 'Bantuan Wang Ehsan' (Monetary Aid), 'Rumah Tsunami' (Tsunami Resettlement Housing), and; Fisheries and Agriculture Assistance. The analysis shows that a majority of the affected people were unhappy with the three programmes because of the late delivery of assistance, bureaucracy, nepotism, cronyism, and favouritism. However, the Malaysian governmental authorities were intact and functioning after the tsunami and managed to govern, avoiding large scale and violent demonstrations despite serious hostility. The affected populations chose democratic channels to voice their resentment through voting in elections. This case study offers an understanding of specific nature of the impact of natural disaster that is localised, case base and context specific. The tsunami is, I would argue, a significant catalyst, in triggering the transformation in government's disaster management as (Chapter 5). Next section identifies the research key findings.

First, the research shows that the transformation in managing disaster was triggered by the interaction of the government's response and the population's reaction. Second, the 2004 tsunami can be seen as a triggering factor that culminated in the government's transformation programmes as a response to

the affected communities' feedback on the weaknesses of the government's actions. Third, the indirect political impact of disasters on local politics depends on the maturity of the democracy in the affected communities because the political process shapes the responses to a disaster's consequences.

The political impact of any disaster is filtered through the political institutions of a country, its social and economic conditions, and its government's effectiveness, which combine to constitute the country's resilience in the face of risk and vulnerability. The legitimacy of political institutions may be as important as government effectiveness in understanding post-disaster politics. The legitimacy of the ruling party, for example, can be saved if the response to disasters perceived by the affected population meets their expectation and the disaster management officials are proven efficient. This in turn "can be an important device to bolster the legitimacy of any government and to rescue a regime from eminent demise" (Schenk & Mamelshagen, 2012, p. 9). To some degree the importance of legitimate political institutions has been recognised by post-Hyogo disaster management, with its emphasis on the involvement of communities in disaster preparation and management. Moreover, according to the Secretary and the former Deputy Secretary of NSC, Malaysian society and its institutions have 'matured', Malaysia's greater wealth enables it to invest in enhanced resilience. Therefore, they argue, although ethnic relations in Malaysia are described as 'smouldering' with isolated and sporadic cases of ethnic tensions they will not become fully activated as in the 'Arab Spring'. According to the former Penang Representative of Teluk Bahang constituency, the 13th May tragedy will not be repeated. However, I argue that a large scale and nationwide disasters are still capable of generating a similar level of disruption (as suggested in Chapter 2) unless the transformative counter-measures put in place after 2004 to prevent it. Forth, in Penang, the PR continued to dominate the Legislative Assembly after the 2013 election with 75% seats (30) that increased from 73% (29 seats) in 2008, whereas BN only secured 10 seats. In the next section I move on to discuss the research questions and its' answers.

The dissertation argues that the discontent and resentment of tsunami affected communities was not mobilised for several reasons. First, liberal-democratic political institutions and processes are embedded in society; the first democratic election took place in 1955 and the party system was well developed. Thereafter, the voters expressed approval or disapproval towards government or opposition through the election process. Thus, the existence of a functioning and mature political process (in particular the elections) served as a safety valve. Second, the political system and governance proved to be robust and resilient. Bujonez et.al define political resilience as "the ability of the state to maintain a functioning government apparatus that provides quality public services, and formulates and implements policies that are perceived to be credible and legitimate" (2013, p.14). These resilient political institutions proved able, despite some operational shortcomings, to deliver their functions and mitigate the disaster risks, to respond, to begin recovery operations, and secure public order. In a similar vein, (Carriere, Miller, Covarrubias, & Lansford, 2013) argue that "political resilience is the ability of government institutions to provide a political framework to community resilience that is the capability to anticipate risk, limit impact, and bounce back rapidly through survival, adaptability, evolution, and growth in the face of turbulent change" (p. 76). In contrast, a less resilient system might possibly collapse under the impact of unexpected disaster possibly leading to active political violence.

The key political institutions consist of the ruling government, the political parties, civil service and other government institutions. According to Bujonez et.al

> In conflict affected states, weak national institutions and fragmented political identities undermine the formation of a robust governance system. In such a scenario the political system will be highly vulnerable to any unexpected events and crisis such as civil unrest and coup d'état, which would negatively impact its ability to mitigate, adapt and recover that may lead to a partial or complete collapse of the political order (p. 14).

The government's legitimacy is, however, endangered when it is perceived to favour a particular ethnic or party group, which leads to antagonism between the government and population, and the population may even challenge the government's legitimacy. As Bujones et.al argue "…a fragile or conflict-affected state is often characterised by a lack of effective political processes" (Bujones et al., 2013, p. 15). Some 70% voted for the opposition as a protest and 20% did so to demonstrate their loss of trust in the ruling government (Chapter 4). Therefore, governments should be inclusive in addressing the affected population's demands, and strive to be impartial in an effort to minimise complaints and protest in order to sustain political stability. Evidence from the fieldwork shows that a functional and workable democracy in Malaysia proven to be able to manage the stress caused by the tsunami, in a social and political context characterised by inter-ethnic group tensions and accusations of mismanagement in the distribution of aid.

Summary

Undoubtedly, the 2004 tsunami brought significant changes to Malaysian disaster management. The motivation for changes were driven by the aggravation of discontents and weaknesses of the disaster management agencies' responses. Based on my research I argue that the tsunami and its aftermath amplified the stresses flowing from existing issues but the impact on government's disaster management policies and its indirect effect on local politics (but limited to the my case study areas) were dependent on the complexity of the respective population and its resilience.

I argue that the novelty of my research lies in: first, the introduction of new areas of study, in the interaction of disasters and the disaster management policy, structure, mechanism and procedures; second, the indirect effects of disaster to local political landscape in the case study areas; third, the extent of the impact depends on the existing political and socio-economic condition of affected communities and the willingness (in particular, political will) of the government to accommodate the r feedback from the affected people. In case of Malaysia, the political will to transform the disaster management came from

the highest level, the Prime Minister and the Deputy Prime Minister, accelerating the transformation.

I conclude that disasters bring about massive changes and even transformative effects, but to understand how disasters impact on government's, detailed case studies on affected local communities and interviews with disaster management officials and local politicians need to be conducted. In Malaysia, issues related to the disaster mainly focus on late response and mismanagement in delivering of recovery programmes such as lack of transparency, bureaucracy, nepotism, cronyism and favouritism, as such the disaster produced stress that triggered dissatisfaction and resentment. Thus, the government responded by initiating various transformative adaptation on disaster management to ensure efficient and effective governance.

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Appendix 1.1: List of Interviewees

1. Dato' Seri Dr. Hilmi Yahya
   The then Deputy Chief Minister of Penang and Member of Parliament of Balik Pulau (2004 Election);

2. Mrs. Siti Faridah Arshad
   2004 Member of State Assembly of Telok Bahang (2004 Election);

3. Datuk Mohamed Thajudeen Abdul Wahab
   Secretary of National Security Council,

4. Datuk Che Moin Umar
   Former Deputy Secretary of National Security Council
   (Who was the person in charge of coordinating Government agency's response during 2004 tsunami);

5. Mr. Norhisham Kamarudin
   Principle Assistant Secretary of Disaster Management Division, National Security Council;

6. Mr. Mohd Rizuad Mohd Azuddin
   Head of Perkasa Youth Wing, Penang Chapter;

7. Representative of 'Tsunami House' residents at Tanjung Bungah, Penang (Choose to be anonymous).

Appendix 1.2: Interview Questions

A. Dormant CPE: Before 2004 Tsunami

1. In your opinion, what are the long standing issues and problems from ethnic perspectives?
   a) Malays……
   b) Chinese…….
   c) Indian…….

2. How do you describe the state of intra-ethnic relations (how frequent clash and tension)?
   a) Malay-Chinese……
   b) Malay-Indian……
   c) Chinese-Indian……

3. How do you describe the state of communal politics and political struggle in Penang? Please specify.

   ……

B. Activated CPE: During the Tsunami

1. How do you explain the ethnic reaction to the government's tsunami responses?
   a) Malay……..
   b) Chinese……..
   c) Indian……..

2. What were the issues and problems during response and relief?

   ……

3. Any intra-ethnic tension or clash?
   a) Malay-Chinese……
   b) Malay-Indian……
   c) Chinese-Indian……

4. Any public anger, frustration and dissatisfaction? Why?

   ……

5. Any issues and problems during recovery phases in pertaining to the following assistance:
   a) Bantuan Wang Ehsan Bencana (Disaster Monetary Aid)

      ……

   b) Rumah Tsunami (Tsunami Housing Scheme)

      ……

   c) Agricultural and Fishery assistance

      ……

6. Any discrimination according to race or ethnic bias? Please specify.

   ……

7. State of political struggle? Any political turmoil? Please specify.

   ……

C. Deactivated CPE: Post Tsunami phase- Community Based Disaster Risk Reduction Programmes (CBDDR).

1. How effective the following programmes?
   a) Disaster Awareness Programme

      ……

   b) Tsunami Early Warning Systems and Drills

……

2. What are the principal means that your agency uses to communicate with the public during the response?

……

3. Does your agency have a public awareness campaign to increase the general populations understanding of natural hazards? Please explain.

……

4. Do your agency exercises disaster preparedness practice drills which include the public? Please explain.

……

5. How do your communication warnings to the public?
   a) Direct to the public via media
   b) Via disaster management system
   c) Via other government officials
   d) Others (please specify)……

6. In your opinion, what do you need to improve warnings services and public response? (Select all that are relevant)
   a) National Coordination Committee
   b) Greater availability of data
   c) Better telecommunication
   d) More accurate warnings (less false alarms)
   e) Better dissemination
   f) Enhanced public awareness of risks

g) Enhanced public education to understand and respond to warnings specifically targeted at schools, government departments, other organizations (please specify)……

h) More effective decision-making processes within government

i) Improved trans-boundary cooperation

j) Others (please specify)……..

D. Impact of Tsunami on Politics

1. In your opinion, why there has been drastically changed in political landscape of Penang after the tsunami?

   ……

2. Did you anticipate the political change in 2004?

   ……

3. Why did voters change the State Government from Barisan Nasional (National Front) in 2004 to Pakatan Rakyat (People's Alliance) in 2008?

   ……

4. Was it because of the impact and influence of public anger and dissatisfaction on tsunami response and recovery programmes?

   ……

5. How strong do you agree that the frustration on tsunami response and recovery influenced voters to vote against Barisan Nasional?

   ……

Appendix 1.3: Questionnaire Form

Part A: State of Communal Politics before 2004 Tsunami

1. How would you describe the state of ethnic relations in your community before the tsunami?
   A. Good
   B. Bad
   C. No particular problems

2. Was there any ethnic clash in your community?
   A. Yes
   B. No

3. If Yes, How often?
   A. Constantly (more than 12 cases a year)
   B. Occasionally (6 to 12 cases a year)
   C. Seldom (1 to 5 cases a year)

4. If disaster occurred in your community, would you help your neighbours based on ethnic preference?
   A. Yes
   B. No
5. Did you satisfy with the performance of Member of Parliament and Member of State Assembly in your area before the tsunami?
   A. Yes
   B. No

6. If No, Why?

   ……
7. Have you ever heard about tsunami?
   A. Yes
   B. No

8. If Yes, did you know how to respond to it?

A. Yes
B. No

9. Was there any government's tsunami awareness programme prior to 2004 tsunami?
   A. Yes
   B. No

10. If Yes, did you understand it?
   A. Yes
   B. No

Part B: Tsunami Experience in 2004

11. Was there any warning at the time of the tsunami from any government agencies (for example, police, fire& rescue department, civil defence)?
   A. Yes
   B. No
   C. Don't recall

12. If yes, what type of warning (please tick any that you recall)?
   A. Siren
   B. Loud speaker announcement
   C. Verbal commands from police
   D. Verbal instruction from coast guards
   E. Others (please specify)

13. Did you understand it and able to interpret these warning?
   A. Yes
   B. No

14. If Yes, how did you interpret and respond to any warning?

……

15. If No, Why?

……

16. In your opinion, was the warning understandable by the public?
    A. Yes
    B. No

17. If Yes, please explain how did the public respond to it?

……

18. If No, Why?

……

19. How would you describe government agencies respond to the 2004 tsunami in term of response time?
    A. Quick and rapid
    B. Slow and arrived late
    C. Don’t know

11. Do you think relief was administered impartially?

    A. Yes
    B. No

20. If No, Why?

……

21. Do you think all communities were treated equally in the immediate post-tsunami relief period?
    A. Yes
    B. No

22. If No, Why?

……

23. How would you describe the state of ethnic relations immediately after the tsunami?
    A. Improving
    B. Deteriorating

24. How would you describe the state of ethnic relations in the ten years since the tsunami?
    A. Improving
    B. Deteriorating

25. Do you think post-tsunamis reconstruction efforts were administered impartially?
    A. Yes
    B. No

26. If No, Why?

……

27. Do you think all communities were treated equally in the post-tsunami reconstruction period?
    A. Yes
    B. No

28. If No, Why?

……...

29. Do you think was there any coordinated effort by the communities to save their lives?
    A. Yes
    B. No

30. If Yes, please explain

……

31. If No, do you know why?

……

32. Do you think was there any coordinated effort by the communities to promote post-tsunami reconstruction or did they rely on the public authorities?
    A. Yes
    B. No
33. If Yes, please explain.

……

34. If No, do you know why?

……

Part C: Government's Response and Recovery Programmes

I) 'Bantuan Wang Ehsan Bencana' (Monetary Assistance for Disaster Relief)

35. Did you receive 'Bantuan Wang Ehsan Bencana'? If Yes, go to question number 36. If No, go to question number 38.
    A. Yes
    B. No

36. If Yes, did you satisfy with the amount?
    A. Yes
    B. No

37. In No, please explain?

……

38. In your opinion, why you did not receive ‘Bantuan Wang Ehsan’?

……

39. In your opinion, was there any ethnic bias in distribution of ‘Bantuan Wang Ehsan’?

A. Yes
B. No

40. If Yes, please explain how did you experience it:

……

II) Allocation of ‘Rumah Tsunami’ (Tsunami Housing Scheme)

41. Did you receive ‘Rumah Tsunami? If Yes, go to question number 42. If No, go to question number 44.

A. Yes
B. No

42. Did you satisfy with the house?

A. Yes
B. No

43. If No, please explain?

……

44. In your opinion, why you did not receive ‘Rumah Tsunami?

……

45. In your opinion, was there any ethnic bias in distribution of ‘Rumah Tsunami?

A. Yes

B. No

46. If Yes, please explain how did you experience it:

……

III) Distribution of Fisheries and Agricultural assistance

47. Did you receive Fisheries and Agricultural assistance? If Yes, go to question number 48. If No, go to question number 50.
    A. Yes
    B. No

48. Did you satisfy with the amount?
    A. Yes
    B. No

49. If No, please explain?

……

50. In your opinion, why you did not receive the Fisheries and Agricultural assistance?

……

51. In your opinion, was there any ethnic bias in distribution of Fisheries and Agricultural assistance?
    A. Yes
    B. No

52. If Yes, please explain how did you experience it:

……

Part D: Evaluation of Government's Tsunami Risk Reduction Programmes

I) Tsunami Early Warning System and Tsunami Drill

53. After 2004, government frequently ran awareness programmes that included tsunami drill. What is your level of understanding now after 10 years of the tsunami siren?
    A. I am learning about the siren and understand it.
    B. I still do not understand the siren.

54. If your answer is A, please explain how did you learn about the siren?

    ……

55. If your answer is B, please explain why?

    ……

56. Can you differentiate the tsunami siren from police, ambulance and civil defence?
    A. Yes
    B. No
    C. Don't know

57. If No, Why?

    ……

58. If you heard tsunami siren, what would you do?
    A. If there is a confirmed tsunami threat and I heard the tsunami siren, then I will go immediately to the higher ground and wait for further instruction from government agencies especially the police.
    B. I will do nothing because of false alarms in the past.
    C. Others (please specify).

59. Do you know about tsunami evacuation plans such as emergency route to a safer place and the designated temporary evacuation centre in higher ground?
    A. Yes
    B. No

60. If, No, Why?
    A. Never heard about it.
    B. I heard but never receive information about it.
    C. Have some information but not very clear and do not understand.
    D. I know about it but I am confused because no proper and clearly signage of emergency route towards the evacuation centre.
    E. Others (please specify).

61. In your personal opinion do have confidence in the measures put in place by government to deal with another tsunami?
    A. A great deal
    B. Some
    C. None at all

62. After 2004, do you understand and are aware of the threat of tsunamis?
    A. Yes
    B. No
    C. Not sure

63. If Yes, which type of communication mostly influenced you?

    ……

Part E: Suggestion to Improve the Tsunami Response and Recovery

64. What are your suggestions to improve the following:
    A. Tsunami Early Warning.

    ……

    B. Bantuan Wang Ehsan Bencana (Monetary Assistance for Disaster Relief)

    ……

    C. Allocation of 'Rumah Tsunami' (Tsunami Housing Scheme)

    ……

    D. Distribution of Fisheries and Agricultural assistance

    ……

    E. Ethnic relation during the tsunami response

    ……

    F. Ethnic reconciliation during the tsunami recovery

    ……

Part F: Voting Behaviour

65. Are you a member of a political party?
    A. Yes
    B. No

66. If yes, which one and for how long?

    ……

67. Have you been a member of any other party?
    A. Yes

B. No

68. If yes, which one and for how long?

……..

69. Why did you leave that party?

…….

70. Did you vote in the 2004 General Election?
    A. Yes
    B. No

71. If Yes, for which party did you vote:
    A. BarisanNasional: UMNO, GERAKAN, MCA, MIC
    B. Pakatan Rakyat: PKR, DAP, PAS
    C. Independent Candidate

72. Why did you vote that party?

……

73. If you vote for difference party as compared to previous election, why did you change?

……

74. Did you vote in the 2008 General Election?
    A. Yes
    B. No

75. If Yes, for which party did you vote:
    A. BarisanNasional: UMNO, GERAKAN, MCA, MIC
    B. Pakatan Rakyat: PKR, DAP, PAS

76. Why did you vote that party?

……

77. If you vote for difference party as compared to previous election, why did you change?

……

78. How important was the tsunami and subsequent events in your decision to vote for a different party?
    A. Very important
    B. Important
    C. Not important

79. Did you vote in the 2013 General Election?
    A. Yes
    B. No

80. If Yes, for which party did you vote:
    A. Barisan Nasional: UMNO, GERAKAN, MCA, MIC
    B. Pakatan Rakyat: PKR, DAP, PAS
    C. Independent Candidate

81. Why did you vote that party?

……

82. If you vote for difference party as compared to previous election, why did you change?

……

Part G: Demography

83. Age group
    A. 20-30
    B. 31-40
    C. 41-50
    D. 51-60
    E. 61 & above

84. Gender
    A. Male
    B. Female

85. Occupation
    A. Government
    B. Private
    C. Business
    D. Unemployed

86. Educational Level
    A. University Degree
    B. Secondary School
    C. Primary School

87. Ethnicity
    A. Malay
    B. Chinese
    C. Indian
    D. Other

88. Annual Family Income
    A. Below RM9,600 (below poverty line)
    B. RM9,601 - RM24,000

C. RM24,001 – RM48,000
D. RM48,001 – RM60,000
E. Above RM60,001

Thank you for your kind cooperation.