A case study of collaborative disaster management in Malaysia

_____

A thesis submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy in Management

at the

University of Canterbury

by

Khiam Jin LEE

Primary Supervisor: Assoc. Prof. Sanna Malinen

Associate Supervisor: Assoc. Prof. Venkataraman Nilakant

_____

Department of Management, Marketing and Entrepreneurship

University of Canterbury, Christchurch, New Zealand

November 2019

For Gaik Sock (Fiona), my wife, and Han, my son,
without whose love, companionship, and understanding
this dissertation would not be possible.

For Lee Eng Oo (李荣有）and Lim Kooi Huah (林桂花), my parents,
without whose love, kindness and sacrifice
this PhD journey would not exist.

Abstract

Cross-sector collaboration is often cited as an effective tool to mitigate and manage disasters (James, 2011; Power, 2017). However, research in non-disaster settings suggests that collaboration is difficult to develop and is problematic (Connelly, Zhang, & Faerman, 2008; Uhr, 2017). Simultaneous cooperation and competition between organisations (Bengtsson, Raza-Ullah, & Vanyushyn, 2016; Stentoft, Mikkelsen, & Ingstrup, 2018) can also hinder collaboration. Thus, though collaboration between agencies during disasters is considered necessary, it can be challenging in practice. This study examines the barriers to cross-sector collaboration during disasters by investigating collaborative disaster management of floods in Malaysia.

The study employs a qualitative methodology using a case study approach. The case involved the management of disasters caused by floods. The Malaysia National Disaster Management Agency (NADMA), a nodal agency for managing disasters, is the focal organisation. Semi-structured interviews were used for data collection. The research participants were 24 strategic and operational decision makers in 12 different disaster management organisations. In addition, six disaster aid recipients were interviewed. Secondary data from government documents and news reports complemented interview data. Data analysis techniques used included two cycles of coding, memoing, constant comparisons and theoretical saturation (Charmaz, 2008, 2014; Saldaña, 2016).

The thesis identifies three barriers to cross-sector collaboration between stakeholders during disasters: a) perceived organisational status and hierarchy; b) different levels of motivation to collaborate; and, c) organisations lack the ability to collaborate in disasters. Based on the motivation to collaborate and the perceptions of one's and others' ability to collaborate, the thesis proposes four types of collaboration: (1) enthusiastic, (2) mandate-driven, (3) reluctant, and (4) non-collaborative. For practitioners, this study suggests integrating collaborative approaches within a command and control framework for effective disaster management.

Keywords: Disaster management, collaboration, cross-sector collaboration, Malaysia floods, command and control.

Acknowledgements

Table of Contents

List of Tables

List of Figures

List of Abbreviations and Acronyms

AADMER   ASEAN Agreement on Disaster Management and Emergency Response

AHA Centre   ASEAN Coordinating Centre for Humanitarian Assistance on disaster management

ALARP   As low as reasonably practicable

ASEAN   Association of Southeast Asian Nations

CEM   Collaborative emergency management

CPM   Collaborative public management

CFE   Center for Excellence in Disaster Management and Humanitarian Assistance, USA

CAQDAS   Computer-assisted qualitative data analysis software

CRED   Centre for Research on the Epidemiology of Disasters

DEMOs   Disaster Emergency Management Organisations

DRR   Disaster risk reduction

ECOSOC   United Nations Economic and Social Council

EU   European Union

FEMA   Federal Emergency Management Agency

GDP   Gross Domestic Product

ICT   Information and communication technology

IFRC   International Federation of Red Cross and Red Crescent Societies

IPCC   Intergovernmental Panel on Climate Change

NADMA   Malaysia National Disaster Management Agency

NEMAs   National Emergency Management Authorities

NGOs   Non-governmental organisations

NPM   New Public Management

NSC   National Security Council

PPP   Public-private partnerships

TCG	Tripartite Core Group
UN	United Nations
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNICEF	United Nations Children's Fund
UNHCR	United Nations High Commission for Refugees
UNHRD	United Nations Humanitarian Response Depots
UNISDR	United Nations Office for Disaster Risk Reduction
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
USA	United States of America
WFP	World Food Programme
WHO	World Health Organisation

Chapter 1: Introduction

In all natural disasters through time,
man needs to attach meaning to tragedy,
no matter how random and inexplicable the event is.

--- Nataniel Philbrick, writer, USA (1956-)

1.1. Introduction

Contrary to popular perception that natural disasters rarely happen, data from the Centre for Research on the Epidemiology of Disasters (CRED) shows that natural disasters are ubiquitous (Guha Sapir, 2019a). For instance, between 2014 and 2018, 1,790 disasters claimed 82,125 lives, injured approximately 1 million, affected 953 million, and the global cost of the damage was US$785 million (Guha Sapir, 2019a). In the past five years, an average of 358 natural disasters were annually recorded; these frequent disasters trigger ripples of vulnerabilities in social, economic and political processes that rely on the disaster magnitudes and intensities (Guha Sapir, 2019a; Wisner, 2004). In 2018, Malaysia experienced 26 major storms, 23 floods, and 10 forest fires, in which over 39,000 people were affected (Lee, 2019) including two fatalities (Guha Sapir, 2019a). In 2004, Malaysia was affected by the Indian Ocean tsunami (Horton et al., 2008; Ismail et al., 2012). Occasionally, Malaysia also suffers from a trans-boundary haze (Gorbiano, 2019) as a result of slash-and-burn activities in a neighbouring country ("South East Asia haze", 2013).

Given that disasters are frequent, disaster management has recently emerged as a significant discipline (Aitsi-Selmi, Egawa, Sasaki, Wannous, & Murray, 2015; ASEAN Secretariat, 2016; Bennett, 2012; Coppola, 2015; Hermansson, 2016). Disaster management focuses on effective ways to manage and mitigate disasters. The conventional disaster management approach heavily emphasises the command and control model, where a central agency, usually governments, co-ordinates and controls all disaster management activities through a legislative mandate (Adams, Owen, Scott, & Parsons, 2017; Drabek & McEntire, 2003; Guo & Kapucu, 2015a). However, recently, questions have been raised about the efficacy of this approach; collaboration is one way to address these limitations (Kaniewski, 2011; Schneider, 2005). This study, thus, investigates the barriers to cross-sector collaboration in disaster management and attempts to understand the ways it can improve the predominant command and control model for effective disaster management.

The literature suggests that collaborative arrangements are increasingly applied in disaster management (Djalante, 2012; Gray, 1989; Moshtari & Gonçalves, 2017; Osei, 2011; Waugh

Jr & Streib, 2006). However, in practice, collaboration is difficult to develop, maintain and problematic (Connelly et al., 2008; Huxham, 1996; Uhr, 2017); the barriers to collaboration for disaster risk reduction (DRR) are recognised (Takara, 2018). However, research about the barriers to collaboration in disasters is scarce. This study seeks answers to why collaboration in disaster management is so challenging.

1.2. Background to the research problem

The public and private sectors widely practise collaboration in their daily non-disaster operations (Gray, 1985, 1989; Jing & Besharov, 2014; Kamensky & Burlin, 2004; M. M. Shaw, 2003). However, collaboration between organisations in disasters is less frequent (Bush, 2015; Kapucu, 2008; Mathbor, 2007). Recent catastrophic events in the USA (Comfort, 2005; Levitt & Whitaker, 2009), Japan (Aoki, 2015a), Indonesia (Karan, Subbiah, & Gilbreath, 2011), China (Y. Chen & Booth, 2011; Cui et al., 2011) and Haiti (Piotrowski, 2010; Rahill, Ganapati, Clérismé, & Mukherji, 2014) highlight that both developed and developing countries are not spared from natural disasters. In fact, countries that were previously deemed not disaster-prone are now experiencing an increased intensity and frequency of natural disasters; Malaysia is one such country (Mohd Yassin, 2015; Sulaiman et al., 2019).

During disasters, public agencies are regarded as the most appropriate organisations to provide the necessary leadership to initiate a disaster response and mobilise resources across different levels of jurisdiction (Boin, 2005b; Cornall, 2005; Rosenthal & Kouzmin, 1997; Waugh Jr & Streib, 2006). Public disaster agencies are named differently in different regions[1]. They can exist as committees, networks or councils consisting of multiple agencies across bureaucracies, and legislatures at national, state and local levels (Ansell & Gash, 2008). To support the government, public agencies exercise given mandates by delivering swift, effective relief to affected populations (Renn, Klinke, & Asselt, 2011; Shi, 2012). To enable a more effective response and facilitate subsequent recovery, public agencies engage and coordinate with civil organisations, citizens and other actors to complement government and community resources (Comerio, 2014a, 2014b; Vakis, 2006; Wisner, 2004).

---

[1] Public agencies responsible for disaster management are referred to as the National Disaster Management Authority in India, National Emergency Management Authorities (NEMAs) in the USA (S. L. Cutter, Ash, & Emrich, 2014; Proy, Tinel, & Fontannaz, 2013) and Disaster Emergency Management Organisations (DEMOs) in the Caribbean (Osei, 2011).

During routine times, the collaborative approach is generally deemed an effective, innovative approach to resolving problems and strengthening community relationships in the public service (B. Chen, 2010; Clegg, 2008; Gazley & Brudney, 2007; O'Leary & Vij, 2012). In a non-crisis context, a convenor often has no time pressure to access the necessary information and make decisions in consensus involving multiple stakeholders. However, the situation is different during disasters; there is a time pressure to make decisions with limited information (Buchanan & O Connell, 2006; Danielsson & Ohlsson, 1999). Some extreme cases show that failing to collaborate across various sectors in disasters has led to severe adverse consequences, e.g., during the responses to Hurricane Katrina in the USA in 2005 (Farazmand, 2007; Sobel & Leeson, 2006) and in the 2011 eastern Japan earthquake and tsunami (Aoki, 2016; Norio, Ye, Kajitani, Shi, & Tatano, 2011). With Turkey, failings in multi-agency collaboration in responding to the series of earthquakes between 1999 and 2011 led to the reorganisation of the national disaster management system (Hermansson, 2016, 2017; Unlu, Kapucu, & Sahin, 2010). Crowe (2013) argues that collaboration is needed within disaster management by highlighting the gap between need and practice. On one hand, disaster management inherently coordinates with other parties in resource mobilisation and relief response; coordination is a form of collaboration. On the other hand, disaster management actors are often on their own and under-prepared to respond to a disaster. Collaboration, irrespective of its definition, application and limitations, is necessary in disaster management.

In Southeast Asia, public agencies are the predominant authority for disaster response. These public disaster agencies are mandated to access the necessary resources in disasters (as *sponsor* of the disaster management institution), and are expected to focus on on-going collaboration and use appropriate skills to help attain its goals through collaboration (as *champion* of the disaster management institution) (J. N. Hood, Logsdon, & Thompson, 1993; Pfeffer & Salancik, 2003). Public disaster agencies may not necessarily possess all resources, especially in a large-scale disaster (Aoki, 2015b; Blanco, 2015; Comfort, 2005). As a result, the public agencies increasingly use collaboration to handle the 'wicked problems' of a disaster's consequences (T. Christensen, Lægreid, & Rykkja, 2013; Kapucu & Garayev, 2011; Waugh Jr & Streib, 2006). Distributing timely relief to an often dispersed population after a disaster, given limited information, time, high uncertainty and threats, is an example of a disaster aftermath 'wicked problem' (Boin, 2005b; Lai, 2011). Collaborating partners in disaster management typically include (but are not limited to): (1) public agencies or line ministries with mandated roles in

disaster management; (2) non-governmental organisations (NGOs); (3) regional and international organisations; (4) private sector organisations; and (5) the general public.

Natural disaster management typically involves four interconnected stages: mitigation, preparedness, response, and recovery (Haddow, Bullock, & Coppola, 2011; Khan, Khan, & Vasilescu, 2008; Vakis, 2006). Janssen et al. (2010) categorise the mitigation and preparedness stages as the 'prior to disaster' phase; the stage from early signals to the immediate onset of a disaster as 'during the disaster' phase and the work of recovery through reconstruction and subsequent evaluation as the 'post-disaster' phase. This study combines 'during the disaster' and 'post-disaster' phases; hereafter this combined stage is the *post-disaster response phase* (Janssen et al., 2010). Because the *post-disaster response phase* is life-threatening, high-stakes and time-sensitive (Comfort, 2007; ECOSOC, 2019), this study focuses on the interactions and collaboration between public disaster agencies and their partners in this disaster management phase. Even when combining what has been studied on collaboration and disaster management, little is known about the barriers to collaboration during a disaster aftermath (Gray, 1989; Jing & Besharov, 2014; Wamsley & Wolf, 1996).

1.3. Purpose of the study and the research questions

My study aims to address the under-researched area of cross-sector collaboration in disasters. The acute disaster response phase involves various stakeholders, thus collaboration between public- and non-public actors in such an upheaval is challenging. By examining cross-sector barriers to collaboration during the acute disaster response phase involving organisations, networks or individuals, this study aims to clarify a social phenomenon (Yin, 2014). This phenomenon highlights that there are differences between collaboration during routine times and disasters, and asks what factors hinder stakeholders from collaborating in disasters to achieve the mutual goals that are unachievable working alone. This study aims to contribute to the theory on collaboration in disaster management and provide guiding principles for disaster academics, policy makers, and practitioners to implement a more effective collaborative disaster management.

1.4. Overview of the research design

Earlier sections show that, in failing to effectively respond to disasters, societies risk increasing fatalities, injuries and environmental degradation that lead to severe disruption of livelihoods, social order, and property damage (Rodríguez, Quarantelli, & Dynes, 2006). Comerio (2014a)

also argues that a disaster prompts a new normal, advances re-thinking and planning. Understanding a disaster's consequences and a desire to collaborate in disasters give rise to this study's research design. This study uses a case study approach (Yin, 2014) to examine the barriers to cross-sector collaboration in disaster management. The Malaysia National Disaster Management Agency, NADMA[2], the central agency mandated to coordinate and manage all matters related to disaster management, is the focal organisation. The case used in the present research is the disaster management of floods in Malaysia. The participants interviewed include strategic and operational decision makers of the Malaysian public disaster agencies and their collaborating partners, and the aid recipients. Semi-structured interviews were used as the primary data source, complemented by government documents, organisations and news reports. Multiple data sources strengthen the findings through triangulation of evidence obtained from the Malaysian public agencies, regional bodies, UN agencies and disaster management databases. Qualitative research tools of coding, memoing, constant comparisons, and theoretical saturation were used to analyse the data (Charmaz, 2014; Saldaña, 2016).

Malaysia, the context of the study, is increasingly exposed to a range of climate-related disasters such as intensified floods, cyclonic storms, landslides and earthquakes (Gupta, 2010; Middleton, 2015); hydro-meteorological natural disasters, i.e., floods and storms, are the most frequent. Floods often occur during the year-end monsoon season that brings torrential rains, particularly to the east coast of Peninsular Malaysia (Mohamed Shaluf & Ahmadun, 2006; Pereira, Tan, & Komoo, 2010). Landslides, as a result of environmental degradation and economic development (N. W. Chan, 1998), are other common disasters in Malaysia. In addition to the prevalence of disasters, another reason for selecting Malaysia as the context for this research was that there has been a strong government-led initiative to improve the national disaster management ability ("Flood woes", 2017) and an increasing multi-stakeholder approach to learn best practice at regional (ASEAN Secretariat, 2005; Wijayanti, 2012) and national level ("Disaster preparedness", 2017; "Flood woes", 2017). This government-led initiative was inspired by the concept of DRR and the international initiative: the Sendai Framework for Disaster Risk Reduction, 2015-2030 (Aitsi-Selmi et al., 2015; UNISDR, 2015). DRR is a proactive approach, an "investment for the future" (UNISDR, 2007b, p. 5) and an integral part of all levels of sustainable development. Focusing on Malaysia's experience in responding to natural disasters based on desired DRR principles and the current system to

---

[2] NADMA gave consent in written in July 2017 to use its organisation name in this thesis and future publications.

advance multi-hazard disaster management, this study investigates the barriers to collaboration in disasters.

1.5. Structure of the thesis

This thesis comprises seven chapters:

- Chapter 2 reviews the relevant collaboration and disaster management literature. It begins by defining collaboration and associated terms in the collaboration and disaster management domains. This chapter discusses collaboration's advantages and disadvantages, and the challenges to collaboration in natural disaster management. The chapter also examines the known barriers to cross-sector collaboration in disasters.

- Chapter 3 presents the research methodology and methods used in the study. It begins with the researcher's ontological and epistemological considerations, followed by a discussion of the research design and the selection of the case for this study. The engagement strategies with the research participants and the data collection techniques are then discussed. Chapter 3 concludes with a discussion of the sampling, theoretical saturation and addresses concerns about the study's reliability and validity.

- Chapters 4 and 5 discuss how the data were analysed.
  - Chapter 4 explains the data analytical techniques and processes to organise and categorise participants' quotes and codes from the interview transcripts. The initial (or open) coding of the interview data led to numerous open codes that are reduced to two levels of focused coding.
  - Chapter 5 continues the data reduction from Chapter 4 and discusses how the salient first- and second-level focused codes are identified from the open codes. This chapter discusses how the focused codes are reduced to three key themes.

- Chapter 6 discusses the study's results: three barriers to collaboration in disasters. Following this, the four types of collaboration in disasters are discussed and, together, how these barriers and collaboration typologies shape decision making by disaster actors to achieve common goals through cross-sector collaboration.

- Chapter 7 concludes the thesis. It begins with an elaboration of approaches to disaster management, follows by the academic and practical contributions and discusses the study's limitations and possible future research recommendations.

Chapter 2:
Literature review

> Truth can be found only through the negation of all thoughts about it.
>
> *---Upanishads, India philosophy*
> *Approximately 3 millennia ago (ca. 800 B.C.E – 500 B.C.E)*

2.1. Introduction

This chapter first defines and discusses the concepts used in this study. These concepts include various collaborative arrangements related to disaster management. The forms of collaboration and the differences in their use in routine and non-emergency times compared with during disasters are discussed. The advantages and disadvantages of collaboration in different contexts are then presented. The challenges to collaboration in disasters, the roles of public agencies in disasters, and disaster management as a knowledge body are also discussed.

Apart from the already known factors that constrain collaboration, this chapter explores alternative perspectives on collaboration, changing organisation management structures and the volatile environments that hinder collaboration in disasters. Finally, I present examples from the literature of past disaster response failures from both developed and developing countries. The lessons learnt from these events can inform how increasing cross-sector collaboration in disaster management could have resulted in more positive outcomes.

2.2. Defining collaboration

Collaboration is generally perceived as a voluntary, interactive, evolving process (Graham & Barter, 1999; Gray, 1989; Wood & Gray, 1991) between two or more entities, be they individuals, organisations, groups, units or communities, to solve common problems (Agranoff & McGuire, 2003; Damanpour & Schneider, 2006). The importance and effectiveness of collaboration are widely cited in management research (McGuire, 2006; Nohrstedt, 2015; Noran, 2014). From a management perspective, collaboration is defined as two or more stakeholders working together voluntarily to resolve a set of problems that cannot be solved by the stakeholders on their own (Gray, 1985; Kamensky, Burlin, & Abramson, 2004). Gray (1989) argues that collaboration is not a state of organisation with a rigid milestone but a deliberative process in which parties communicate constructively the differences between them and enable the creation of synergy otherwise beyond an individual's vision and ability. Thomson and Perry (2006) assert that collaboration is non-linear and process-oriented. To apply a collaborative approach effectively, stakeholders are expected to deal with the intertwined dimensions of governance, administration, organisational autonomy, mutuality, norms and trust (Thomson & Perry, 2006). Woodland and Hutton (2012) argue that collaboration occurs when "two or more

entities (organisations or people) come together or stay together… to achieve a vision…that could not otherwise be accomplished in isolation" (p. 370). This explains, in part, that collaboration is difficult and no consensus on its definition (Gajda, 2004).

To summarise the literature, collaboration shares four key characteristics. First, collaboration is a strategic instrument to attain organisational objectives (Gray, 1989; Imperial, 2005). Second, collaboration engages two or more independent entities and encourages sharing resources and capabilities (Woodland & Hutton, 2012). Ideally, it also should be free from hierarchical governance and influence (Provan & Kenis, 2008). Third, collaboration demands partners to make a long term commitment rather than it being a one-off activity and (Provan & Kenis, 2008)Fourth, collaboration evolves, is dynamic (Majchrzak, Jarvenpaa, & Bagherzadeh, 2015; Majchrzak, Philip, & Faraj, 2012), and can dissolve within an agreeable time frame (Wankhade & Patnaik, 2019a). Collaboration occurs also outside of organisational context as it can involve other entities such as networks, groups, individuals or communities. The next section discusses the various forms of collaboration.

2.2.1. *Inter-organisational collaboration*

Organisations often collaborate to achieve something greater than they could on their own. Inter-organisational collaboration is a voluntary activity with mutual benefits to participating entities to solve problems that are too difficult to be solved by an organisation alone (Agranoff & McGuire, 2003; Bardach, 1998). This definition is commonly adopted in collaborative research but it does not clearly emphasise the continuum of an active process, joint decision making, long-term commitment and interdependency that is central to collaboration. Combining thinking from previous work (Agranoff & McGuire, 2003; Bardach, 1998; Gazley, 2008; Imperial, 2005; Keyton, Ford, & Smith, 2008), I use the following operational definition of inter-organisational collaboration: two or more independent entities working together voluntarily and actively in an interactive process with joint decision making towards mutual goals that could not be achieved individually.

Definitions of inter-organisational collaboration from the 1980s to 2010s share common themes of problem solving and achieving mutual goals (Graham & Barter, 1999) as the two primary motivating factors for collaboration. Building on a synthesis of collaboration theories and organisational learning literature, Woodland and Hutton (2012) summarise the five attributes of collaboration as: (1) shared purpose (McCann, 1983), (2) complex hierarchies

(Hovik & Hanssen, 2015), (3) developmental process (Doz & Baburoglu, 2000; Vangen & Huxham, 2003), (4) varying levels and degrees of integration (Phillips, Lawrence, & Hardy, 2000); and (5) a cycle of enquiry consisting of dialogue, decision making, action and evaluation where collaborative partners aim to accomplish their shared purpose or goals (Gajda & Koliba, 2007; Gajda & Koliba, 2008).

This study uses collaboration as a tool of governance and a strategy to address complex problems following a natural disaster by examining the interactions between organisations, networks, and individuals. The term inter-organisational collaboration in the literature refers to interactions between organisations and excludes individuals or the public; its study examines only issues or events from the perspective of organisational interdependency in a context (Damanpour & Schneider, 2006; Hardy, Phillips, & Lawrence, 2003; Keyton et al., 2008). This study includes organisations and individuals as collaborative partners, and emphasises the evolving nature and long-term commitment meaningful collaboration should possess (Majchrzak et al., 2015; Provan & Kenis, 2008). Table 2.1 summarizes the dominant thinking on collaboration from 1985 to date. It shows evolution of the definition of collaboration from chiefly focusing on resource sharing, problem solving and mutual appreciation between the 1980s and 90s to joint decision making, shared vision and increased stakeholder interdependent relationships in the 2000s.

Table 2.1 presents various scholars definitions of collaboration across different disciplines. Scholars' work on collaboration since 1985 includes some important defining characteristics: joint activities and decision making, resolving common problems, and interdependent relationships. Understanding the differences in a collaborative strategy is important because they lead to varied processes, memberships and performance critical for delivering results as expected by the collaboration initiator(s) as well as the public.

Other forms of collaboration, such as inter-sectoral and cross-sector collaboration, are widely applied in diverse research domains. Inter-organisational collaboration is different from inter-sectoral or cross-sector collaboration; it consists of organisations, groups and individuals with distinctive characteristics and applications.

Table 2-1: *Definitions of collaboration*

Sources	Definitions of Collaboration
Gray (1985, p. 912)	Collaboration is "the pooling of appreciation and/or tangible resources, e.g., information, money, labour, etc., by two or more stakeholders to solve a set of problems which neither can solve individually".
Gray (1989, pp. 12-13)	"Inter-organisational collaboration [is] an emergent process between interdependent organisational actors who negotiate the answers to shared concerns". Collaboration is "a method for solving shared problems and resolving conflicts, [that] can be used to help organisations join forces, pool information, and reach mutually satisfying long-term agreements".
Huxham (1996, p. 1)	Collaboration is "working in association with others for some form of mutual benefit".
Sink (1998, p. 1188)	Collaboration is a "process by which organisations with a stake in a problem seek a mutually determined solution [pursuing] objectives they could not achieve working alone"
Kamensky, Burlin, & Abramson (2004, p. 8)	"Collaboration occurs when people from different organisations produce something together through joint effort, resources, and decision making, and share ownership of the final product or service".
Imperial (2005, p. 286)	Collaboration is "any joint-activity, by two or more organisations, intended to create public value by working together rather than separately".
Keyton, Ford, & Smith (2008, p. 381)	Collaboration is "the set of communicative processes in which individuals representing multiple organizations or stakeholders engage when working interdependently to address problems outside the spheres of individuals or organizations working in isolation".
Woodland and Hutton (2012, pp. 370-371)	Collaboration is "a nested phenomenon that takes place in a complex, open systems environment…that exists simultaneously at the inter-organisational, intra-organisational and inter-professional levels".
(Moshtari & Gonçalves, 2017) p.1676	Defining inter-organisational collaboration from the perspective of humanitarian setting, inter-organisational collaboration refers to "a partnership process in which two or more independent organisations work closely to program and implement their operations…organisations negotiate and agree on the goals of their shared efforts and on the amount of contribution each partner must bring to execute the collaboration".
(Hermansson, 2016)	Defining collaboration from the perspective of disaster management, and inspired by the IFRC, collaboration happens when actors join hands across relationships and sectoral boundaries to assess a situation, initiate and work on a coherent response to mitigate disaster negative impacts. But also warn the factors of internal legitimacy, power balance, integration and trust may have an impact on collaborative processes.
Gazley (2017, p. 1)	Collaboration is "a team and group dynamic…[that] occurs within and across institutions but also within the partnerships and networks [partners] inhibit".

2.2.2. *Inter-sectoral collaboration*

Current literature has a dearth of empirical studies and opposing arguments on collaboration involving public agencies in managing natural disasters (Janssen et al., 2010). This study focuses on disaster collaboration involving organisations and individuals or communities (such as disaster aid recipients living in rural areas), thus inter-sector and cross-sector collaboration (discussed in the next section) are appropriate approaches compared with inter-organisational collaboration which focusses only on interaction between organisations.

Inter-sectoral collaboration is commonly referred to as the collective actions of diverse specialised entities across sectors or domains, performing multiple tasks, and interacting in a continuum for a common objective (Beser, 2011; Gazley, 2008; Tooher et al., 2017). It is defined as a purposeful working relationship encompassing government, non-government, non-profit, business, individuals, policy makers, academia, and multi-organisational actors at the community, national and international scale, along and across horizontal (i.e., national and community) and vertical (i.e., between organisations of similar jurisdiction and authority level) domains (Chircop, Bassett, & Taylor, 2015, p. 182). The term inter-sectoral collaboration has received attention since the 1970s, when the World Health Organisation (WHO) zealously promoted the inter-sectoral approach as a means to promote health and health equity awareness and facilitate the health agenda implementation across sectors (WHO, 1978, 2011). This explains why inter-sectoral collaboration is widely adopted in public health policy research, health education promotion (Burgess et al., 2016; Delaney, 1994; Kinsman et al., 2018), disease control (Dhimal & Karki, 2014; Freeman et al., 2013) and community-based programme development (Andersson, Bjärås, Tillgren, Östenson, & Mälardalens, 2005). Only recently has the inter-sectoral approach been used in disaster research so the literature is limited (Chang-Richards, Seville, Wilkinson, Kachali, & Stevenson, 2014; Kachali, Storsjö, Haavisto, & Kovács, 2018; Phibbs, Kenney, Severinsen, Mitchell, & Hughes, 2016).

2.2.3. *Cross-sector collaboration*

Cross-sector collaboration is the key focus of this study and a disaster is the setting where collaboration is required. For this study, cross-sector collaboration is defined as a voluntary, mutually beneficial engagement with a long-term commitment to solve common problems that cannot be achieved working alone, involving public and non-public actors comprising organisations, individuals and communities spanning organisational and sectoral boundaries. An example of cross-sector collaboration occurs when a natural disaster strikes: public disaster agencies lead collaborative partners consisting of organisations, individuals or communities, to respond immediately to support the affected people. However, cross-sector collaboration has its challenges. Among others, stakeholders' inconsistent attitudes towards regulatory compliance, a lack of an overall strategy, conflicting values and ambiguous roles are potential challenges to implementing cross-sector collaboration (Halvorsen, Almklov, & Gjøsund, 2017).

The definition and application of cross-sector collaboration is similar to inter-sectoral collaboration except the latter is more commonly used in public policy, health education and healthcare research, often in a formal setting (Kachali et al., 2018; Li, Huikuri, Zhang, & Chen, 2015; Tooher et al., 2017; WHO, 2011), and emphasises technical expertise and multi-tasking (Beser, 2011; Gazley, 2008; Tooher et al., 2017). Cross-sector collaboration is widely applied as a strategy to address a myriad of public challenges (Agranoff & McGuire, 2003; Goldsmith & Eggers, 2004; Mandell, 2001; Rethemeyer, 2005). The cross-sector approach is claimed to have advantages over other collaborative forms such as an emphasis on interactions with citizens, flexibility in experimenting, and an appreciation of principal-to-principal rather than typical principal-agent relationships among partners as is seen in other joint activities (Forrer, Kee, & Boyer, 2014).

Cross-sector collaboration is an alliance of individuals and organisations from non-profit organisations, government, philanthropic, and private sectors that use their diverse perspectives and resources to jointly solve a societal problem and to achieve a shared goal (Bryson & Crosby, 2008). Cross-sector collaboration implies "the linking or sharing of information, resources, activities, and capabilities by organizations in two or more sectors to achieve jointly an outcome that could not be achieved by organizations in one sector separately… involving government, business, non-profits and philanthropies, communities, and/or the public as a whole" (Bryson, Crosby, & Stone, 2006, p. 44). Halvorsen et al. (2017) maintain that cross-sector collaboration consists of both formal and informal initiatives that lead collaborating partners towards a common goal.

To avoid interpreting collaboration narrowly, and recognising the rigour of varying collaborative arrangements, reference to the collaboration literature is not limited to cross-sector collaboration. Instead, this study includes studies of inter-sectoral and inter-organisational approaches, public-private partnerships and other collaborative arrangements, *inter-alia*, multi-stakeholder collaboration (Djalante, 2012; Gray & Purdy, 2018; Jennifer, 2013), multiagency approach (Van Scotter, Pawlowski, & Cu, 2013), network management (Agranoff & McGuire, 2001; Moynihan, 2009; Gerry Stoker, 2006), and collaborative governance (Ansell & Gash, 2008; Emerson & Nabatchi, 2015; Klijn & Skelcher, 2007). Table 2.2 clarifies what has been discussed in earlier sections about the distinctive characteristics of inter-sectoral, inter-organisational and cross-sector collaboration and how they are interpreted and applied in their respective research domains.

Table 2-2: *A summary of the characteristics of inter-sectoral, inter-organisational and cross-sector collaboration*

	Inter-sectoral collaboration	Inter-organisational collaboration	Cross-sector collaboration
Definition	"Inter-sectoral collaboration has been described as a deliberative, recognized, purposeful relationship constituted of government, non-government, not for profit, business, academia, communities, policy-makers, managers, clinicians and multi-organizational stakeholders at the local, national and global scale, along and across horizontal and vertical axes" (Chircop et al., 2015, p. 182).	Inter-organisational collaboration is defined as two or more organisations engaging voluntarily and actively in an interactive process to achieve both common and individual goals that neither could achieve if they acted alone (Agranoff & McGuire, 2003; Bardach, 1998; Damanpour & Schneider, 2006; Keyton et al., 2008)	Cross-sector collaboration implies "the linking or sharing of information, resources, activities, and capabilities by organizations in two or more sectors to achieve jointly an outcome that could not be achieved by organizations in one sector separately… involving [partnerships among] government, business, non-profits and philanthropies, communities, and/ or the public as a whole" (Bryson et al., 2006, p. 44). Cross-sector collaboration has "both formalized and informal efforts to work together across sectors on activities…" (Halvorsen et al., 2017, p. 3).
Applications	Promoted by the WHO since 1970s as a strategy by linking relationships and efforts between many sectors to achieve health outcomes in a more effective, efficient or sustainable manner than can be achieved by acting alone (Adeleye & Ofili, 2010; WHO, 2011). It is largely applied in research related to public health policy, health education, tropical disease control and community-based programmes (Andersson et al., 2005; Burgess et al., 2016; Kinsman et al., 2018)	Commonly applied as strategy in extensive sectors including but not limited to human service delivery, healthcare, science, management, public safety, disaster management (Bailey & Koney, 1996; Butts, Acton, & Marcum, 2012; Karam, Brault, Van Durme, & Macq, 2018; Kozuch & Sienkiewicz-Malyjurek, 2016; Powell, Koput, & Smith-Doerr, 1996).	Cross-sector collaboration is widely applied in multiple research disciplines to address a wide range of public challenges including but not limited to the disaster management domain (Agranoff & McGuire, 2001; K. Chang, 2012; Goldsmith & Eggers, 2004; Guo & Kapucu, 2015a; Halvorsen et al., 2017; Rethemeyer, 2005; Simo & Bies, 2007).
Limitations	Mainly focussed on health and education sectors. WHO's stance on inter-sectoral collaboration may limit possible contributions outside the health sector to achieve health equity aims within a timeframe (WHO, 2008).	Inter-organisational collaboration is a strategy examined through the lens of organisational interdependency in a context but excludes public or individuals without organisational membership as collaborative partners (Gray, 1989; Imperial, 2005; Keyton et al., 2008)	Against the traditional centred-hierarchical bureaucracy (Kapucu, 2009; O'Leary & Vij, 2012; Ortt, Bucker, & Klein, 2016), public organisations find it challenging to "operate in hetearchies, providing [collaborative organisations] greater discretion, flexibility, and even autonomy" (p. 46) if the aim is to make cross-sector collaboration effective and innovative (Forrer et al., 2014)

2.3. The structures of cross-sector collaboration

In general, two broad forms of collaboration can be delineated as: (1) ad hoc and case-by-case basis; or (2) an ongoing and more permanent practice (Johnson, Goerdel, Lovrich, & Pierce, 2015). Ad-hoc collaboration is informal and focused on consensus-building; it is often engaged to resolve a particular dispute or issue (Goldstein & Butler, 2009; Margerum, 2002). Ad hoc collaboration can be formed swiftly without presupposed ideas to maintain it as an on-going relationship and it can be useful in an emergency response (O'Leary & Vij, 2012). In contrast, on-going collaboration can form as an established organisational core practice (Brooks, 2002; Johnson et al., 2015). Both ad hoc and longer-term collaboration are increasingly common across different industries and sectors, including collaboration during emergencies (Bingham, O'Leary, & Carlson, 2008; Gazley, 2008; Kapucu, Arslan, & Demiroz, 2010; Kapucu & Garayev, 2011).

In addition to ad hoc and long-term relationships, collaborative arrangements can be viewed from four perspectives: (1) vertical collaboration (i.e., central and state government); (2) horizontal collaboration (i.e., across agencies at the same level of jurisdiction); (3) inter-sectorial collaboration (i.e., government, NGOs, or the general public), and (4) wide-area collaboration (i.e., coordinating multiple stakeholders from vertical, horizontal and inter-sectoral collaboration) (Brassard, Howitt, & Giles, 2015). In the present study, cross-sector collaboration, this study's focus, is a form of wide-area collaboration (Aoki, 2015b; Brassard et al., 2015).

Cross-sector collaboration can be voluntary or mandated (Provan & Kenis, 2008). Gazley (2008) suggests that most collaboration between organisations occurs voluntarily and informally. However, research that distinguishes mandated from voluntary collaboration remains scant (O'Leary & Vij, 2012). In both cases, collaboration requires some level of authority or legitimacy to advance and survive (Provan & Kenis, 2008). Legitimacy is defined as a generalised perception that the actions of an alliance or network are desirable and proper (Suchman, 1995). Thus, legitimacy is critical and influences stakeholders' commitment to collaboration (Walker, de Vries, & Nilakant, 2017). It is noteworthy that some level of legitimacy in collaboration is necessary because it helps gain credibility from others in some systems or societies with specific norms and values (Provan, Kenis, & Human, 2015), otherwise it risks remaining rudimentary and unsustainable.

A structural arrangement in any form is the next development that collaboration between organisations needs to take once the shared concerns and common goals are identified (Hardy et al., 2003; Padiila & Daigle, 1998). The desirable structure for governing the new network in an ad hoc or on-going, voluntary or mandated (or some sort of combination) collaboration is little known. The kind of structure is important for the benefits of formalisation and governance (Ansell & Gash, 2008; Walter & Petr, 2000). The practice of collaboration among different organisations and collaborative actors is advancing faster than scholarly research to understand the reasons for the formation of the collaboration (Bryson & Crosby, 2008). In acknowledging multi-dimension collaborative forms, this study seeks to understand the rationale of applying cross-sector collaboration to address complex public problems during disasters.

2.4. Forms of joint activity in practice

Various forms of joint activity are often used interchangeably with the term *collaboration* in the operations and management literature. These include the concepts of teamwork, cooperation, partnership and coordination. It is imperative to distinguish collaboration as defined in this study from other forms of joint activity. A focus on a particular collaborative activity (e.g., teamwork or coordination) uses different processes and leads to different outcomes. These forms, however, differ from collaboration (as defined in this study) as set out below. It is helpful to clarify their meaning before proceeding with further discussion on collaboration and disaster management. To explain the similarities and differences of the other forms of joint activity in practice and collaboration, Figure 2.1 illustrates the interrelationships between these constructs in a Venn diagram.

Among the constructs, *teamwork* is deemed to most closely resemble collaboration (Bedwell et al., 2012). Teamwork is an example of "instantiation of collaboration" (Bedwell et al., 2012, p. 135) because it is similar to collaboration in terms of being multi-dimensional, reciprocal and works towards a shared objective (Marks, Mathieu, & Zaccaro, 2001; Salas, Burke, & Cannon-Bowers, 2000). West (2012) argues teamwork can be expanded in a multi-teamwork system through effective integration between different organisations. Nonetheless, teamwork is different from collaboration at the analysis level because collaboration can happen between individuals, organisations, communities and units, whereas teamwork involves only individuals within a similar team or organisation (Bedwell et al., 2012). Collaboration can exist beyond the team level (e.g., NGOs extending further livelihood assistance support to a village after a disaster; public agencies organising a disaster simulation exercise involving multiple

non-public organisations); these collaborative arrangements cannot be categorised as teamwork.

Cooperation is another construct frequently cited as a synonym of collaboration (Bedwell et al., 2012). Cooperation is a means of collaboration to achieve an organisation's objectives but focuses only on interactions between two functional parties (Pinto, Pinto, & Prescott, 1993). It refers to a reciprocal interaction among participants working together to solve a portion of a problem while pursuing shared goals (Argyle, 2013; Dillenbourg, Baker, Blaye, & O'Malley, 1996; O'Leary & Bingham, 2007; Sylves & Comfort, 2012). Cooperation, like collaboration, is a joint effort involving mutual engagement in an integrated manner to solve a problem through joint decision making, work and shared ownership (Kamensky et al., 2004). However, cooperation is focussed on solving part of a problem whereas collaboration aims to achieve a common goal holistically.

Partnership is a form of cooperation usually bound by a formal agreement (Carnwell & Carson, 2008; Kamensky & Burlin, 2004). A partnership is a specific example of cooperation. A partnership is like collaboration in several ways. Both require iterative communication and exist on an ad hoc or long term basis (Goldstein & Butler, 2009; Johnson et al., 2015). Additionally, a partnership involves individuals working interdependently with joint decision making to address a shared problem and is not limited to the leaders from respective organisations making major decisions (K. Cooper & Shumate, 2012; Damanpour & Schneider, 2006; Keyton et al., 2008). The difference between a partnership and collaboration is that the former relies highly on relationship management (Gallant, Beaulieu, & Carnevale, 2002), and partnerships are always bound by some sort of agreement; collaboration does not necessarily have a binding agreement.

Coordination is typically formal, requiring unified procedures and specific mechanisms to accomplish the assigned tasks (Bingham & O'Leary, 2006; Bingham et al., 2008; Boin, 2005a; Ergun, Keskinocak, & Swann, 2011; Kapucu, Arslan, & Demiroz, 2010; O'Leary & Bingham, 2007). For example, coordination happens when production line operators must first completely assemble the necessary components of a device before moving it on to quality assurance supervisors for the finished product's standard verification. Coordination is perhaps the most challenging term to differentiate from collaboration because teamwork, cooperation and a partnership require some kind of coordination to advance. This explains why coordination and collaboration are often used interchangeably. Coordination, like collaboration,

emphasises joint decision making throughout all stages of the task(s) (Ansell & Gash, 2008) with a high focus on attaining desired common results. Nevertheless, coordination is different from collaboration because the essence of collaboration is not a sequential order but the entirety of every process leading to achieve common objectives. Table 2.3 compares various scholars' definitions of teamwork, cooperation, partnership and coordination.

Table 2-3: *Definitions of teamwork, cooperation, partnership and coordination*

Sources	Definition of Construct
Teamwork	
West (2012); Bedwell et al. (2012, p. 135)	Teamwork involves only individuals within a similar organisation and is an example of "instantiation of collaboration" (p. 135). Teamwork happens within an organisation and can be expanded to multi-team systems through effective integration (West, 2012).
Cooperation	
Argyle (2013), Dillenbourg et al. (1996), O'Leary and Vij (2012), Sylves and Comfort (2012)	Cooperative work requires each participant to solve a portion of the problem or subtasks in a coordinated way, to pursue shared goals in advancing participant relationships.
Partnership	
Arnstein (1969); Carnwell and Carson (2008); Goldstein and Butler (2009); Johnson et al. (2015); Kamensky and Burlin (2004); Shemer and Schmid (2007)	Partnership usually demands a formal agreement with binding obligations to achieve common results such as a public-private partnership; a partnership is effective when there is power sharing between weaker partners with powerholders or key decision-makers.
Coordination	
Boin (2005b); Bingham, Drabek and McEntire (2002); Ergun, Keskinocak and Swann (2011); Kapucu, Augustin and Garayev (2009); Kapucu, Arslan and Demiroz (2010); O'Leary and Carlson (2008); O'Leary and Vij (2012)	Coordination is about efficacy. It is more formalised, and focuses on achieving sequential subtasks by a unified arrangement for effective public service delivery.

Figure 2.1 shows the shared constructs, space and relationships of teamwork, cooperation, partnership and coordination in the sphere of multiple-stakeholder collaboration. These constructs are similar in terms of joint decision making, reciprocity and a desire to attain a common objective. This study focusses on collaboration because it best describes the collaborative processes investigated in a disaster.
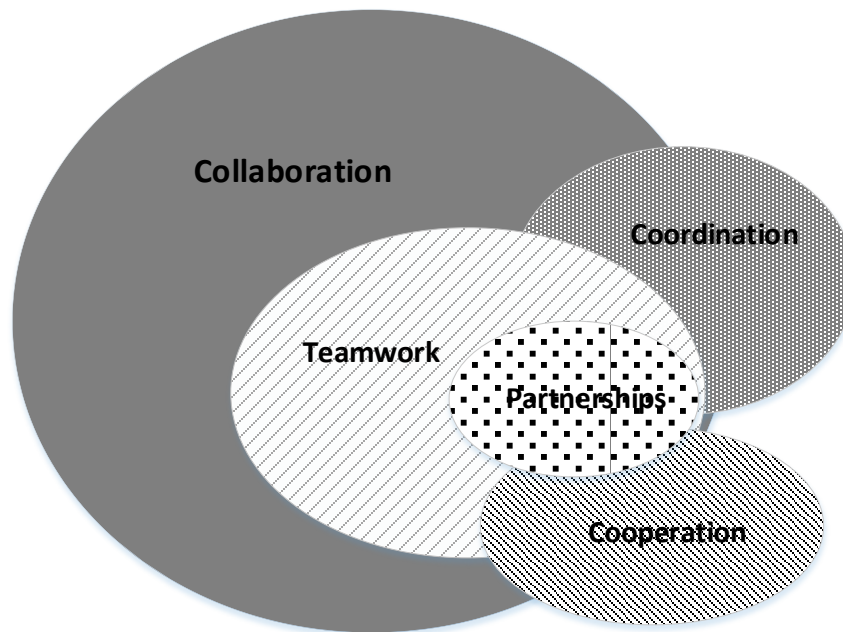
Figure 2-1: Shared space of the related constructs and collaboration. Adapted from Bedwell et al. (2012, p. 136)

2.5. The advantages of collaboration

Though there is much that we need to understand about collaboration between organisations, organisations are increasingly working in collaborative arrangements. These organisations include public agencies that apply a collaborative approach both during routine times and emergencies, such as during a disaster response (Moshtari & Gonçalves, 2017; Reitan, 1998).

Business organisations have experimented with various forms of collaboration such as consortia, clusters, co-operatives, joint ventures, strategic alliances (Larsson, Bengtsson, Henriksson, & Sparks, 1998), networks and public-private partnerships (Büchel, 2000; Hennart, 1988; Kamensky & Burlin, 2004; Parkhe, 1996). For instance, manufacturers collaborate in the form of a partnership with suppliers to enhance product innovation (Un, Cuervo-Cazurra, & Asakawa, 2010) and even rivals collaborate to strengthen mutual R&D capacity (Bengtsson & Kock, 2000; Gnyawali & Park, 2009). In business, collaboration is often perceived as important for mutual benefit, problem solving, reciprocity and concerted action (Kamensky et al., 2004; O'Leary & Vij, 2012). From the management perspective, collaboration is useful to gain economies of scale, reduce transaction costs, better quality of service or end product, or to gain access to new markets (Bamford, Gomes-Casseres, & Robinson, 2003; Gazley, 2008; Gazley & Brudney, 2007; Gray, 1989; Linden, 2003).

Learning from the private sector, public agencies have begun to collaborate across different organisational and institutional boundaries in various forms. These forms of working together are alliances, agreements, associations, coalitions, commissions, networks and unions (ASEAN Secretariat, 2013; J. Chen, Chen, Vertinsky, Yumagulova, & Park, 2013; Kamensky et al., 2004; Kapucu, 2005; Kapucu et al., 2009). Some collaboration, such as associations, clusters and networks, are found in both the private and public sectors.

Collaboration between organisations is important and is used increasingly because of its many perceived benefits. It is regarded as a strategy for responding to volatile environments or to address funding unpredictability (Gazley, 2017). Recent research on public administration encourages public agencies to collaborate with external partners (Jensen, Feldmann-Jensen, Johnston, & Brown, 2015; S. Patrick, 2014; Sørensen, 2012). The driving forces for collaboration (or forming networks, as commonly termed in public administration) are to recognise the interdependency of various stakeholders and to balance government autonomy while addressing complex public problems (O'Leary & Vij, 2012). Collaboration is also regarded as able to strengthen efficiency in addressing shared problems, to access more resources, to diffuse risk, and can provide opportunities for organisational learning and increase institutional legitimacy (M. K. Foster & Meinhard, 2002; Gazley & Brudney, 2007; Gray, 1989; Provan et al., 2015; Provan & Milward, 1995). More recently, collaboration is perceived as useful to promote innovation (Hartley & Rashman, 2018; Koppenjan & Klijn, 2004). In the non-profit, non-government sector or among civil society organisations, collaborating with other partners is perceived as being able to improve service delivery and build a stronger relationship with the grassroots community (Snavely & Tracy, 2000).

Often, public managers perceive accountability as important because it is associated with good governance that is best achieved by strategic alliances or collaboration (Linden, 2003). Brinkerhoff (2002, 2003) asserts that participation of common citizens including NGOs in the planning, implementing and supervising of government-led public good delivery is beneficial to good-governance performance. Thus, public agencies that deliver social services effectively through collaboration are deemed compliant with governance expectations. Governance is defined as the rules, forms and administrative practices that are consensus-driven, guiding collective decision making with an emphasis on decisions made by groups of individuals or organisations rather than by one individual (Lynn, Heinrich, & Hill, 2001; Gerry. Stoker, 2004). In addition, public agencies that are committed to pursuing a longer term collaborative arrangement can develop strategic value not achievable through a one-off activity (D. Aldrich,

2012; Booher & Innes, 2002). The strategic value of long-term collaborating networks includes strengthened coordination and effective communication among stakeholders (Healey, 2006; Innes & Booher, 2010). These strategic values are critical to building consensus when making decisions (Healey, 2006; Innes & Booher, 2010).

Among the many benefits of collaboration, organisational learning has been widely studied (Berlin & Carlström, 2015; Hartley & Rashman, 2018; Milway & Saxton, 2011; Nooteboom, 2008; Thompson, 2012). Effective learning is deemed achievable through networks and the locus of innovation is embedded in the network or a system of inter-organisational relationships (Powell et al., 1996). Powell et al. (1996) argue that a network in the form of inter-organisational collaboration is conducive to instilling innovation because it provides timely access to new resources and tests internal competency and learning ability. Though there are extensive benefits of collaboration, collaboration can be challenging to achieve. The next section discusses the potential disadvantages and the challenges of collaboration.

2.6. Potential disadvantages and challenges of collaboration

The extensive collaboration literature suggests that the reasons for organisations collaborating depend on the perceived benefits to be gained from the collaborating partners (Agranoff & McGuire, 2003; Bryson & Crosby, 2008; McGuire & Silvia, 2010). Longoria (2005) argues that collaboration is used for its perceived values, i.e., rationality, legitimacy, efficiency and being socially responsible, rather than that for the desire to achieve common goals between partners. Bano (2019) in her recent study of partnership arrangements between government agencies and NGOs in Pakistan, suggests that the attributes of the NGO leadership have critical influences to the success of state-NGO collaborations. Literature shows the complexity in using collaboration as a strategy. In practice, collaboration does not guarantee the intended results; it is associated with many potential disadvantages and challenges.

Among the disadvantages of collaboration, particularly involving public agencies, is the potential loss of institutional autonomy and mission drift (Ferris, 1993; Gazley & Brudney, 2007). Public agencies are also concerned that collaboration can cause decreased public accountability and financial control, increased transaction costs and, more concerning, is that evaluating collaboration results has proved difficult (Ferris, 1993; Gazley, 2008; Gray, 1989; Huxham, 1996; M. M. Shaw, 2003). Within organisations, goals and resources may be different (G. Smith & May, 1980). When among collaborating partners an organisation's goals and resources are different, collaboration is hindered. For example, within a disaster public agency,

a strategic and policy compliance unit and a disaster response operation unit may have different approaches to how a disaster relief action is best implemented (e.g., strictly compliant with standard operating procedures or is flexible depending on the context). Some argue that it is the participants in an organisation, not the organisation, that have objectives (G. Smith & Cantley, 1985). However, their goals are not necessarily similar, hence the complications of collaboration between organisations are multiplied (G. Smith & Cantley, 1985).

Collaboration involving public and non-public actors has many challenges. Public agencies increasingly realise that they cannot address public problems alone (O'Leary & Vij, 2012; Rogers, Burnside-Lawry, Dragisic, & Mills, 2016). Citizens have increased expectations of public agencies to implement innovative approaches for solutions, increased public administration governance and funding to provide quality general services (Bamford et al., 2003; Jentoft & Chuenpagdee, 2009; Shi, 2012; Vangen, Hayes, & Cornforth, 2015). However, public- and non-public collaboration does not happen easily. For example, during an immediate disaster response, disaster actors may not have adequate information, resources or knowledge to decide when and with whom to collaborate and how an intended collaboration should be formed.

To some extent, public agencies may be reluctant to inform the public about when, where, and how government operates, in part, because of a lack of public trust in government (Crowe, 2013). Other challenges to collaboration can also identified. First, advances in information and communication technology and the popularity of social media make collaborative decision making between government and other actors almost instantaneously known by the public (Crowe, 2013; Yates & Paquette, 2011). Decision-makers from public organisations are concerned about possible drawbacks. Second, endogenous factors such as differing organisational culture and structure and leadership of the collaborating units are challenges. Third, there are exogenous factors such as varieties of membership, communication barriers, lack of trust with external partners (K. Cooper & Shumate, 2012). For example, during disaster search and rescue and relief operations, public actors reluctantly respond to social media messages without first verifying the authenticity of the spiral news and considering the available resources and limitations. At the time, a nodal disaster management agency has to deal with the consequences of unchecked information posted on websites by the first disaster response agencies that compete with each other to show public accountability. The simultaneous cooperation and competition, or *coopetition,* approach among partners further complicates intended cross-sector collaboration (Bengtsson et al., 2016). This is a typical

example of what some regard as organisations competing with each other fiercely and cooperating simultaneously without neglecting their self-interest (Bouncken & Fredrich, 2016; Luo, 2007; Stentoft et al., 2018). More recently, disaster scholars argue that to prepare for future disasters, it is necessary to develop the next generation core competencies (Feldmann-Jensen, Jensen, Smith, & Vigneaux, 2019). These competencies emphasise developing individual capability, technical capacity, and building relationships critical to prepare for emerging hazards and disaster risks (Feldmann-Jensen et al., 2019). In the increasingly interconnected world, the importance of building relationships between local, national and international disaster actors in strengthening disaster risk management is evident (Feldmann-Jensen et al., 2019; Jensen et al., 2015). In practice, these competencies take time and are difficult to develop during non-emergencies as well as in disasters. Combined, these challenges make collaboration difficult to design and implement.

2.7. Collaboration is disasters

This study acknowledges that disaster aid recipients cannot be called collaborating partners as commonly interpreted in the collaboration literature about organisations or groups. However, I include them in the study and acknowledge their role as non-organisational actors in collaboration (Bryson, Crosby, & Stone, 2015; Bryson et al., 2006). Including aid recipients in this study also acknowledges the importance of "collaboration in all its forms" (Knight, 2013, p. 45). Including disaster aid recipients as *collaborative partners* echoes the views that the inclusion of collaborative actors of all forms is an integral strategy to deliver an improved, effective, coordinated service (Boin, 2005a; Ikeda, Sato, & Fukuzono, 2008; McLoughlin, 1985).

Although a plethora of definitions exist (Quarantelli, 1988, 2005), a disaster, either man-made, natural or technologically driven, is always associated with negative consequences (Gupta, 2010; Hermansson, 2017; Mukhopadhyay, 2005). The consequences of a disaster are chaotic and complex, often associated with fatalities, injuries and environmental degradation (Crowe, 2008; Mukhopadhyay, 2005; UNESCAP, 2016). Disasters can lead to severe disruption of livelihoods and social order, and property damage (Rodríguez et al., 2006). Smith (2005) contends that the consequences of a disaster are expansive because it disrupts society politically, socially and economically. When a disaster strikes, it is the people in the communities that feel the first impact of the disaster and often they are also the first respondents to the extreme event before professional assistance arrives. Aid recipients may provide useful

feedback to public and non-public actors. This alliance, in return, provides solutions and assistance to support the aid recipients and affected communities. However, the collaborative forms, processes and approaches to develop and maintain cross-sector collaboration in disasters are under-researched, particularly in the disaster response and recovery phases (Robinson & Gaddis, 2012).

Many organisations, including public sector organisations, regard natural disasters as events of "high impact, low probability" (Crowe, 2008; Hollnagel, 2015). In contrast, CRED reports that, in 2018, there were 315 natural disasters that killed 11,804 people, affected 68 million people and caused US$131.7 million in economic losses worldwide (Guha Sapir, 2019a). Some regions and countries suffer more from disasters than others (Sreshthaputra, 2017; UNESCAP, 2016). In 2018, Asia accounted for 80% of the global deaths and 76% of the populations affected; 47% of the total deaths were recorded in Indonesia (Guha Sapir, 2019a, 2019b). Contrary to what is perceived as an event of low probability, the occurrence of natural disasters has started to become the 'new normal' in the world; their frequent occurrence has caused serious disruption to society (UNESCAP, 2016).

In practice, since natural disasters are perceived as rare events, policy makers often opt to adopt a precept of As Low As Reasonably Practicable (ALARP) (Woodruff, 2005). This principle refers to a level of acceptable risk without incurring extra cost yet it is safe to maintain the status quo (Hollnagel, 2015). Though public organisations, in general, acknowledge that collaboration helps alleviate the negative consequences of extreme events, if public managers perceive disaster is unlikely in the near future and an ALARP attitude prevails, collaboration involving public and non-public actors in organisational and socio-ecological domains will remain under bureaucratic inertia (Hollnagel, 2015).

Different from developing and managing collaboration in non-emergency and routine times, planning and managing for collaboration in a disaster is more complicated because it is time sensitive, chaotic, complex, and beyond typical contractual arrangements (Y. Chang, Wilkinson, Potangaroa, & Seville, 2011; Y. Chang, Wilkinson, Seville, & Potangaroa, 2012). However, collaboration in disasters is urgently needed for effective search and rescue, swift distribution of relief aid, rapid post-disaster recovery and reconstruction. Disasters are surprises and threats that disaster stakeholders have to manage and monitor (Lanir, 1983). Managing disasters corresponds to tackling *unexampled events* that have not occurred before and are

beyond the capacity or experience of a single organisation, or the collective experience of all organisations in the same domain, or even of the entire society (Westrum, 2006).

Despite many challenges, some actors, such as NGOs and civil society organisations, play important roles in post-disaster response and recovery (Eikenberry, Arroyave, & Cooper, 2007; Minamoto, 2010; Osa, 2013). Public-private partnerships are commonly noticed collaborative arrangements; they have increasingly been applied as a strategy to build the resilience of communities and cities against natural disasters and are not limited to a post-disaster response (Auzzir, Haigh, & Amaratunga, 2014; ECOSOC, 2019; Gjerde, 2017; Hardenbrook, 2005; Poontirakul, Brown, Seville, Vargo, & Noy, 2017). In general, why an organisation collaborates and how the collaboration is best implemented and measured in a disaster are not fully understood (Longoria, 2005).

Hollnagel (2015) argues that the essence of managing a disaster is to remain in control in a disruptive environment or to absorb its impact. Partners in non-disaster collaboration demand different degrees of control as identified in public and private sector collaboration in business (Dimancescu & Botkin, 1986; Gray, 1985, 1989; Jing & Besharov, 2014; Kamensky & Burlin, 2004; Perlmutter & Heenan, 1986; M. M. Shaw, 2003); in collaboration between government and NGOs (Linden, 2003; Ramanath, 2009); and among government, business and NGOs (Fosler, 2002). However, remaining in control in disasters amidst cross-sector collaboration involving multiple organisations, networks, individuals and communities is challenging. Often, public agencies are the principal stakeholders in post-disaster response but the literature shows that cross-sector collaboration (Bryson & Crosby, 2008) in disasters involving public agencies is under-researched.

2.7.1. *Public organisations in disasters*

Disaster management is a key governmental responsibility that is challenging to fulfil (Boin, 2005b; Boin & 't Hart, 2003). The advancement of technological, organisational and institutional capacities has led to the emergence of a globalised system for disaster risk management (Jensen et al., 2015). This system moves away from depending on one large organisation in responding to disasters to a multi-stakeholder approach (Jensen et al., 2015). Such stakeholders include public agencies and non-public disaster agencies (e.g., NGOs and civil society organisations). These non-public disaster agencies have started sharing the responsibilities of traditional public disaster agencies in handling disasters. However, an effective, credible and specialised agency, often a government agency, with experience in

disaster management is still in demand to convene cooperation, coordinate actions and provide overall leadership to a wide range of organisations engaged in disaster management (Cheong, 2011; Cornall, 2005; Shi, 2012). In this regard, the service of public disaster agencies remains critical in disaster management. As time is a crucial element in a disaster response to save lives and property, efficiency is emphasised through centralised communication so decisions are made quickly (D. A. Alexander, 2008; Drabek & McEntire, 2003).

The focus of collaborative arrangements in this study is on government- or civilian-led (not military-led) cross-sector collaborative disaster response. In Malaysia, it includes the government, NGOs, regional and international aid organisations and disaster aid recipients. Often, government provides leadership in disaster management (Cheong, 2011; Cornall, 2005; Shi, 2012), and national or local governments are held accountable by the general public to address the disaster aftermath. When a large-scale natural disaster strikes, a network of public service agencies (in Malaysia, the Disaster Management and Relief Committee) (Sulaiman et al., 2019) are assigned to manage the disaster's consequences. NADMA is the national focal point in disaster management and the secretary of the committee at national level. Following a disaster, responding agencies urgently seek resources (Huxham & Vangen, 2005), information (Janssen et al., 2010; Kaye, 1992; Koppenjan & Klijn, 2004) and ideas that are needed to respond to disasters (Dillenbourg et al., 1996). External assistance is needed more when the magnitude of the natural disaster is beyond the capability of any single organisation (K. Cooper & Shumate, 2012; Trist, 1983). In such complicated situations, collaboration, either swiftly produced ad-hoc cooperation or a formal collaboration in infancy, is an effective means for a convener who pledges to embark on on-going collaboration (K. Cooper & Shumate, 2012; Wood & Gray, 1991).

Influenced by the concept of New Public Administration (Bourgon, 2011; Kettl, 2005; Seibel, 2010) or New Public Management (NPM) in the 1980s has led to a role change and reorganisation of the delivery of public services that are increasingly based on efficiency and effectiveness, markets and competition with a focus on performance, outcomes and customers (Ferlie, 1996; C. Hood, 1991). Public disaster agencies are inevitably influenced by this trend; in return, NPM has led to increasing participation of non-public organisations, networks and individuals in disaster management and, therefore, collaboration between diverse stakeholders becomes necessary. Partly of the NPM's influence, public agencies are increasingly promoting *collaborative governance* as an alternative, innovative approach for responding to emergencies

(Hutter, 2016; Kapucu, 2015; Sørensen, 2012). Collaborative governance is a governing arrangement that has public- and non-public actors making joint decisions by consensus and deliberative efforts (Ansell & Gash, 2008). In public administration, collaborative governance has a strong connotation of good governance because the forum is initiated by authorised institutions and is formal. Both public and non-public stakeholders make consensus decisions; the focus of the collaboration is service to the public by delivering intended results to achieve public policy (Ansell & Gash, 2008). Ansel and Gash (2008) and Blanco (2015) argue that the *governance* element is an inextricable determinant of a good government in a disruptive environment. Bingham et al. (2008) argue that *collaborative public management*, an innovative and emerging form of cross-sector collaboration, is most appropriate because it is not only collaboration between organisations but also encompasses the public in government decision making, which enhances participatory governance and the credibility of results. Therefore, concerned public and non-public stakeholders form a forum among themselves in a new mode of governance such as multi-partner cross-sector collaborative governance (Ansell & Gash, 2008; Bingham et al., 2008; Bryson et al., 2015; Emerson, Nabatchi, & Balogh, 2012; Erakovich & Anderson, 2013).

It is a government's prerogative to decide with whom to engage to manage a disaster's aftermath. The decision is influenced by minimalism or experimentalism (Sabel & Simon, 2011). According to Sabel and Simon (2011), minimalism emphasises efficiency and cost-effectiveness, obviates official discretion, and provides choices for voluntarily participation rather than simply adhering to mandatory rules. Minimalism can lessen frontline administration and minimise the influence of key stakeholders by restricting their discretion. Experimentalism emphasises providing direction and autonomy to local and subordinate agencies and ensures their compliance with intended goals. Experimentalists then monitor and assess local performance and find ways for improvements through constant coordination and engagement as a reliable institution of learning. In practice, public disaster agencies are reluctant to adopt a flexible minimalist approach. Instead they adopt a rather authoritative experimentalism approach to manage a disaster's aftermath (Sabel & Simon, 2011). This is why the command and control model is traditionally favoured by public agencies in managing disasters (Green, 2001; Guo & Kapucu, 2015b; Waugh Jr & Streib, 2006).

2.7.2. *Understanding a 'natural' disaster*

Natural disasters, not man-made or technological disasters, are the focus of this study. Natural disasters include earthquakes, landslides, tsunami and volcanic activities (geophysical), avalanches and floods (hydrological), extreme temperatures, drought and wildfires (climatological), cyclones, storms and wave surges (meteorological), epidemics, insect or mammal plagues (biological) (IFRC, 2016). Among the five disaster types, hydrological and meteorological extreme events caused most deaths and affected large populations particularly in Asia and the Pacific in the past two decades (Guha Sapir, 2019a).

A disaster results from both human actions and natural hazards (Wisner, 2004) thus some researchers claim that it is too 'generalisable' to define a disaster as 'natural' (Emrich & Cutter, 2011). Broadly defined, a disaster can be categorised as rapid-onset (e.g., volcanic eruptions and earthquakes) and slow-onset disasters (e.g., drought, famine, and soil salinisation) (D. A. Alexander, 1993; Jha, 2009). A disaster is the result of complicated processes of natural hazards (*natural disasters*), human activities, negligence or errors (*anthropogenic disasters*) (Jha, 2009) or a complex mix of natural hazards and human actions (Wisner, 2004). However, some question whether there is a 'natural' disaster at all since most disasters nowadays are the result of human activities (Jha, 2010; Pall et al., 2011; Qi & Liu, 2017) or anthropogenic climate change (Bouwer, 2011; Mann et al., 2016). A natural hazard is not necessarily transformed into a disaster. Natural hazards, such as a typhoon that occurs on an uninhabited Pacific island, do not cause disasters. A hazard becomes a disaster only under specific conditions: an ill-prepared community is exposed to a hazard and is vulnerable in its ability to respond to the impact (Kappes, Keiler, von Elverfeldt, & Glade, 2012; R. Shaw, Pulhin, & Pereira, 2010; Wisner, 2004). Vulnerability is commonly referred to as a *weakness* to potential damage and destruction results from the malfunction of a current system or part of a system against the hazard (Birkmann, Fernando, & Hettige, 2006; Timmerman, 1981). Rather, not surprisingly, a badly managed disaster response generally gives rise to organisational and societal system reforms (Birkland, 2009; Boin, 't Hart, & McConnell, 2009).

The debate on whether a natural disaster is rare is contentious. According to CRED, in the decade 1999 to 2008, 4,503 natural disasters were documented and resulted in 900,828 fatalities, affected 2.36 billion people and cost US$957 million damage (Guha Sapir, 2019a). In the most recent decade, 2009 to 2018, the total natural disasters decreased to 3,702 with fatalities reduced to 496,049 people, and the total affected people was 1.8 billion, but the total

damage cost soared to US$1.6 billion. These figures do not include technological disasters (Guha Sapir, 2019a). Combined, natural disasters for the two decades ending in 2018 averaged 410 natural disasters per year. Available evidence does not support the notion of a disaster being rare; with climate change, disasters seem to be recurring phenomena.

2.7.3. *Understanding disaster management*

Disaster management is based on a multi-hazard approach covering all four major components of disaster management: prevention (or mitigation), preparedness, response and recovery (C. Peters & Prosser, 2010; Zakour & Gillespie, 2013). However, the common public perception and in aid organisations of disaster management primarily focusses on search, rescue and relief operations – activities in the post-disaster response (Bush, 2015; Croco, 2014). Of late, Kwok et al. (2016) in their research in New Zealand suggest paying attention to 'social resilience'. They define social resilience as "the capacity of people and communities to deal with external stresses and shocks – and how it contributes to community preparedness, disaster response, and post-disaster recovery" (Kwok et al., 2016, p. 197).

In the natural disaster management framework, the mitigation stage helps communities to reduce the potential impact of disasters through a proactive approach such as enforcement of building codes and land development zoning. The preparedness stage is about planning how to respond when a disaster strikes, which involves capacity building, simulation exercises and the installation of early warning systems. The response stage minimises the negative consequences created by a disaster and addresses the immediate, short-term needs of the affected community, including search and rescue and disaster relief. The recovery stage is usually a long-term programme helping the community return to normal involving grants, rebuilding and restoration (Chou, Zahedi, & Zhao, 2014; Khan et al., 2008). The various stages of disaster management are interdependent – work on a particular phase contributes to the success or failure of other phases. In all four phases, collaboration plays a key role. For example, a coordinated, collective response leads to successful recovery and reconstruction. Thus to meet the public's expectations of the disaster management cycle, collaboration with other actors before, during and after disasters is critical (Kapucu, Garayev, & Wang, 2013).

There are differences in the definitions of an emergency, a crisis and a disaster. The terms *crisis management* and *emergency management* are often used interchangeably in the disaster management literature and in policy-making. No doubt, a disaster is a crisis and an emergency

(Mukhopadhyay, 2005; Piotrowski, 2010; Salman Sawalha, 2014). However, the definitions and application of *crisis management* and *emergency management* differ. Having a clear understanding of the terms and concepts of these commonly used terms in disaster management is instrumental to discussing the dynamics of cross-sector collaboration in disasters. From the organisational perspective, a crisis is "an unstable condition caused by a low-probability and high-impact event at a turning point requiring a swift action for its resolution" (Chou et al., 2014, p. 999). Some posit that crisis management is the body knowledge to manage an unexpected incident that threatens society's values and must be addressed immediately (Olsson, 2009). Like 'natural disaster', a crisis is a chaotic condition that may cause instability and bring social, economic and political changes (Mukhopadhyay, 2005). In terms of the characteristics of surprise and instability, disruptions to society and an urgent need for action, crisis management and emergency management share meanings. However, the term *emergency management* is more technically and operationally driven than crisis management. Emergency management consists of operational, strategic decisions for search and rescue, medical relief, provision of shelter, and mobilisation of the resources and people affected by the disaster, but also includes "hazard mitigation", "disaster preparedness" and "disaster response activities" (Waugh Jr & Streib, 2006, p. 131).

In Southeast Asia, *crisis* typically refers to financial turmoil, border disputes, security issues, insurgencies, refugees and displaced populations, institutionalisation challenges, regional and political conflicts (Roberts, 2010; Rüland, 2000; Sangsubhan & Basri, 2012; Weatherbee, 1985). In the EU, the terms *crisis* and *crisis management* are generally used within the framework of the EU Security and Defence Policy in reference to military and civilian intervention, including natural and man-made disaster management, oil spills, maritime incidents, terrorist attacks, epidemic outbreaks, conflicts and refugee crises (Gourlay, 2004; Olsson, 2009). Therefore, this study avoids using the terms *crisis* or *crisis management* because the definitions are too broad and may diffuse with natural disasters and other unexpected non-natural disaster events that disrupt a society. To be consistent, the study uses the terms *disaster* and *disaster management* to refer to the body knowledge about managing problems arising from natural disasters. This study recognises that both *emergency management* and *disaster management* are used interchangeably and are commonly found in the natural disaster management literature ("Civil Defence Emergency Management Act 2002," 2002; Osei, 2011; Raikes & McBean, 2016; Waugh Jr, 2009). This study therefore uses the terms emergency management and disaster management interchangeably.

It is worth noting that research on collaborative initiatives before the onset of disasters is extensive. *Inter alia,* there are studies about the factors influencing the design and subsequent implementation of the governance of cross-sector or inter-organisational collaboration before the onset of emergencies (Vangen et al., 2015), preparing emergency plans (FEMA, 2010), and aligning the missions of different levels of public agencies before emergencies (Fleming, McCartha, & Steelman, 2015). These kinds of collaboration are designed, planned or executed before extreme events. Conversely, studies on collaboration following a disaster are scarce in the public administration and management context. Research on collaboration design, planning and execution in disasters is less common than before the onset of a disaster. Examples of collaboration research following a natural disaster include studies on multi-agency disaster management with an emphasis on information management and coordination (Janssen et al., 2010), building network relationships with an emphasis on members' status and behaviours in the Caribbean (T. Cooper, 2015), and using an inter-governmental and inter-organisational approach in coordinating a disaster response involving many stakeholders with an emphasis on building capacity at the local level (Kapucu, Arslan, & Collins, 2010). The next section discusses approaches to disaster management commonly adopted by public agencies and their partners.

2.7.4. *Disaster management models*

There are different approaches to managing a disaster aftermath. Some scholars argue that a hierarchical organisation with centralised command and control is efficient in a disaster response (D. A. Alexander, 2008; Guo & Kapucu, 2015a). Other scholars refute the authoritative, strict command and control model, and suggest that a flexible, collaborative approach, without creating any additional structures other than a pre-existing emergency authority, is more effective (Comfort, 2007; Dynes, 1994; Mandell & Keast, 2007; O'Leary & Vij, 2012; Quarantelli, 1988; Waugh Jr & Streib, 2006). Further, some argue that collaboration characteristics such as shared leadership and shared resources among organisations (Mandell & Keast, 2007), open communication, broad and inclusive participation, have become the preferred option over the classic top-down bureaucratic system (Waugh Jr & Streib, 2006).

However, in practice, the prevailing model in disaster operations for public agencies is the command and control one, particularly during the rapid response phase (Green, 2001; Guo & Kapucu, 2015b; Waugh Jr & Streib, 2006). Command and control, a term closely associated with a military doctrine, is defined as: "the exercise of authority and direction by a properly

designated commander over assigned and attached forces in the accomplishment of the mission" (Alberts, 2007, p. 318). The command and control model emphasises a hierarchical chain of command to implement "pre-defined schema and pre-determined action plans…communicated down the ranks…and no room for dissent" (Imperiale & Vanclay, 2019, p. 2). This model, featuring a rigid "top-down" approach (Green, 2001) is associated with a high degree of internal control (Page, 2004), centralised decision making and a strict division between those who command and those who act (D. A. Alexander, 2008; Drabek & McEntire, 2003). When an organisation adopts the command and control model, decision making becomes centralised (D. A. Alexander, 2008). In the command and control model, those who control and decide (e.g., a leaders in a government organisations) demand others execute and act (e.g., disaster frontline responders or external assisting organisations) (Drabek & McEntire, 2003).

However, the conventional command and control model has several limitations. It has been suggested that organisations operating with the command and control model are unable to effectively coordinate integrated responses, innovate, and mobilise resources to meet urgent demands arising from a disaster (Bier, 2006; Comfort & Kapucu, 2006; Klijn & Koppenjan, 2006). A vivid example is the failed response to Hurricane Katrina in 2005 by FEMA under a hierarchical structure and multi-layered bureaucracy despite it being a resource-rich, experienced central agency (Eikenberry et al., 2007; Sobel & Leeson, 2006). During the Hurricane Katrina response, the command and control model hindered two-way communication among federal, state and local leaders and disrupted collaborative opportunities within and outside organisations (Garnett & Kouzmin, 2007). After a disaster, the primary objective of responsible public agencies is to facilitate and enable communities to respond effectively and creatively to emergencies (Healey, 2006; Innes & Booher, 2010). This pressing objective can often be achieved only through collaboration between agencies (Curnin & Owen, 2014; Kapucu, Arslan, & Collins, 2010; K. Patrick & Kim, 2011). In the disaster response phase, compliance with normal standard operating procedures as practised during routine times, are often inadequate; public organisations have to address the complexities of the disaster holistically (Coppola, 2015; UNISDR, 2007a, 2015). In this regard, integrating collaborative approach within the command and control framework can be one way to address the limitations of the command and control model.

Notwithstanding the varied disaster management approaches, for two decades, disaster policy makers and practitioners have increasingly promoted a collaborative approach to strengthen operational effectiveness in coping with disasters' uncertainty and complexity (Comfort, 2007;

Goldsmith & Eggers, 2004). For example, Waugh and Streib (2006) and Alexander et al. (2013) advocate 'Integrated Emergency Management' through multiple agencies working to address the consequences of extreme events (Salmon, Stanton, Jenkins, & Walker, 2011). Other scholars suggest 'Collaborative Emergency Management' (Kapucu, 2008; Kapucu, Arslan, & Demiroz, 2010; Kapucu & Garayev, 2011; Oh, Okada, & Comfort, 2014) and 'Collaborative Public Management' to resolve common public problems too difficult to be resolved by a single organisation, often through multi-sector and multi-actor endeavours (Agranoff & McGuire, 2003; O'Leary & Vij, 2012). These collaborative frameworks suggest that collaboration is increasingly demanded to enhance society's capacity to cope with complicated, extreme events such as natural disasters (Boin, 2005b; Kapucu, 2005; McGuire, 2006; Nohrstedt, 2013; Waugh Jr & Streib, 2006). This is consistent with the call from the UN and the international community to collaborate "across mechanisms and institutions for the implementation of instruments relevant to disaster risk reduction and sustainable development" (UNISDR, 2015, p. 17).

2.7.5. *Lessons learnt in disaster collaboration*

Evaluations of past disaster responses provide useful insights into our understanding of the strengths and weaknesses of disaster management systems. Recent disaster literature informs that disaster actors often neglect a more proactive concept of disaster risk management and underestimate potential policy failure (Tong & Zhang, 2019). In their recent study, Doyle et al. (2019) identified important lessons to understand disaster uncertainties, problems in communication and how to communicate these uncertainties for informed decision making. Several recent failed disaster responses in both developed (e.g., the USA, Portugal) and developing countries (e.g., Haiti, Myanmar) as a result of lack of capability to collaborate in disasters, among other reasons, demonstrate valuable lessons in disaster management. The lessons learnt from these disasters provide a picture of the possible impact if collaboration is not used in disaster responses.

This section discusses two failed disaster responses that happened in developed countries followed by two that occurred in developing countries. The first is the weak, uncoordinated response in 2005 of the USA's public administration to Hurricane Katrina, which was beyond expectations (Bier, 2006; Comfort, 2005; Eikenberry et al., 2007; Kaniewski, 2011). The Category 5 hurricane devastated Louisiana and neighbouring states along the Gulf of Mexico, killed at least 1,836 people, and caused an estimated US$81.2 billion damage, making it the "costliest natural disaster in U.S. history" (Levitt & Whitaker, 2009, p. 2). Because central

administration was not able to perform its role in coordinating and organising a coherent disaster response for days, international NGOs such as Oxfam, Save the Children, Amnesty International and World Relief provided disaster relief and humanitarian assistance in the USA for the first time (Eikenberry et al., 2007). Kettl (2006) posits it as "a failure to learn" (p. 274), which was echoed by Donahue and Tuohy (2006) who argue that often the same lessons are identified, incident after incident.

Researchers have highlighted the major lessons learned from the failed Hurricane Katrina response. Among the lessons are: a) uncoordinated leadership (i.e., each agency focused on solving its individual mandated mission with its own command and control model and lacked a commitment to coordinate actions with others); b) failed communication; c) weak planning; d) resource constraints; and e) poor public relations (Donahue & Tuohy, 2006). Other researchers identified the lessons from different perspectives. Among them were: a) the tragedy of anti-commons (i.e., too many individuals vetoing or making overlapping decisions); b) over cautiousness in decision making (i.e., it took approximately six days before the arrival of humanitarian assistance from the federal government); c) political manipulation; d) difficulties in acquiring timely information; e) glory seeking by government officials; and f) bias in decision making among governments (national, state, local government) (Sobel & Leeson, 2006). Awareness of the importance of investing time and resources in managing the relationships of important stakeholders, planning for disaster communication and strengthened coordination of actions between public and non-public actors before the disaster, might have helped mitigate the negative impacts of the hurricane. However, such arrangements can happen only by collaboration among the partners that, in responding to Hurricane Katrina, did not happen.

Another failed disaster response in a developed country, almost unnoticed by many, occurred more recently in Portugal in summer 2017. A forest fire killed at least 64 people in central Portugal ("Portugal wildfires", 2017). The Portuguese Prime Minister claimed the disaster was a human-induced tragedy ("Blame game starts", 2017; "Portugal wildfires", 2017). The lessons learned are surprisingly familiar: uncoordinated measures of prevention, surveillance, detection, as well as a poor early warning system, poor communication and a lack of equipment and resources ("Blame game starts", 2017), matching the conditions commonly argued by scholars in the failure to apply effective interagency collaboration to deliver a coherent, networked response (Drabek & McEntire, 2002; Waugh Jr & Streib, 2006). Such challenges have also been seen in wildfire management in Australia (McLennan & Handmer, 2012;

Wettenhall, 1975) and the USA (Czaja & P. Cottrell, 2014; Fleming et al., 2015; Useem, Cook, & Sutton, 2005). For the past two decades, western USA has had an increased frequency and extended period of wildfires (Czaja, 2015). Addressing this alarming phenomenon, recent research from the USA on wildland fire management suggests collaborative action in a national strategy, state task-force initiatives, a larger fire-fighting community coupled with strong political will would enable resilience in the communities at risk and provide methodology for other domains of disaster management (Czaja, 2015).

A magnitude 7.0 earthquake struck Haiti on 12 January 2010 resulting over 222,000 fatalities and over 300,000 injuries. It affected approximately one third of Haiti's total population either directly or indirectly (IASC, 2010). The magnitude of the damage attributed to the earthquake almost paralysed the country with the economic losses of US$7.8 billion, equivalent to its Gross Domestic Product (GDP) in 2009 (IASC, 2010). The collapse of government buildings and the death of many civil servants tremendously reduced the government's capacity at national and local level to respond to the disaster (IASC, 2010). The void of relief administration and humanitarian assistance was filled by UN agencies, international military, humanitarian donors, society organisations and cross-border aid. Notwithstanding Haiti's government's structural limitations, the influx of NGOs from the global community during the aftermath was perceived as a form of neoliberalism in action that some claimed went against Haiti's self-determination in reconstruction (Edmonds, 2013). Other lessons in responding to the Haitian earthquake include poor logistics arrangements, weak coordination among aid givers and recipients, constraints in resource mobilisation and linking relief to recovery, and failure to pay attention to post-disaster health service delivery (IASC, 2010; Tappero & Tauxe, 2011). In retrospect, disaster planning across multi-jurisdictional actors, particularly local government, and effective leadership might have mitigated the negative consequences of the disaster (Piotrowski, 2010). Awareness, knowledge and the ability to do disaster planning is achievable only by collaboration with others before the disaster.

Another example of an uncoordinated disaster response in a developing country happened in Southeast Asia. In May 2008, the Ayeyarwady Delta of Myanmar was devastated after a category 3 cyclone Nargis made landfall causing over 138,000 fatalities (Creac'h & Fan, 2008; Fritz, Blount, Thwin, Thu, & Chan, 2009), affected 2.4 million people and destroyed over 75% of the health infrastructure (Willis, 2012). This cyclone was the largest natural disaster in Myanmar's history (Seekins, 2009). However, the then military regime of Myanmar denied international emergency relief aid for two reasons. First, the junta prioritised state security over

human security (e.g., having a planned referendum on a new constitution over humanitarian relief). Second, a fear of mass unrest and foreign influence (e.g., foreign assistance during the natural disaster was regarded as a threat to national security) (Seekins, 2009; Suwanvanichkij et al., 2009). At times when immediate water, food, shelter, and medical services were much needed by the disaster-affected population, the regime allocated only US$50,000 for disaster relief (Seekins, 2009; Suwanvanichkij et al., 2009). Only 10 days before Nargis, China's Wenchuan township, Sichuan Province, was devastated by a magnitude 7.9-8.0 earthquake that killed over 69,000 people, injured 374,643 and 17,923 were reported missing (Y. Chen & Booth, 2011; Cui et al., 2011). In a stark contrast to Myanmar's post-disaster relief actions, China's relief actions were swift and effective. The response included mobilising 100 helicopters to carry out search and rescue operations (Seekins, 2009).

The deadlock in the post-Nargis humanitarian relief action was resolved only when the then military regime agreed to forge a formal multi-party collaborative effort that led to the formation of the Tripartite Core Group (TCG) (TCG, 2008a, 2008b). The TCG comprised three parties: the Myanmar government, the United Nations and the Association of Southeast Asian Nations (ASEAN). The ASEAN-led collaboration successfully facilitated the post-Nargis humanitarian relief, recovery and reconstruction (ASEAN Secretariat, 2009; TCG, 2008a).

Each disaster response is unique. With the post-Nargis emergency relief, disaster policy makers and practitioners witnessed multiple problems intertwined with political concerns, a lack of trust, and poor communication channels between aid-giving and aid-receiving parties. To some extent, the deliberately developed engagement and interaction between ASEAN, as an institution, and the then Myanmar government before the disaster became catalysts for the TCG formation, which later proved crucial for post-Nargis relief, recovery and reconstruction (ASEAN Secretariat, 2009; TCG, 2008a). Conversely, a similar trust relationship such as between ASEAN and Myanmar authority, was not detected between the UN bodies and the Myanmar government, at least during the infancy of the TCG concept's development. The complex disaster response in Myanmar is a reference for future disaster actors that early engagement between key stakeholders might be helpful for collaboration in disasters.

2.8. Why is it difficult to promote collaboration in disasters?

Recent literature suggests that collaborative arrangements are increasingly welcomed in disaster management (Ansell & Gash, 2008; Bush, 2015; Damanpour & Schneider, 2006; Mathbor, 2007). However, many reasons hinder collaboration in disaster management: (1)

there is a risk that one party may dominate and influence decision making (Ansell & Gash, 2008); (2) collaboration involving the public sector is highly political because public agencies compete with each other for funding allocation, priority in operation and standard setting (Gray, 1989; Susskind & Cruikshank, 1987); (3) the results of collaboration are difficult to measure (Nohrstedt, 2015); and (4) collaboration does not guarantee consensus in action (Gray, 1989).

Furthermore, collaboration between organisations is highly contextual and volatile. Indeed, several factors are responsible for a lack of collaboration: rigid organisation frameworks, poor inter-organisational communication, inadequate mutual awareness and understanding of goals, and inter-organisational competition (Cited in Foster-Fishman, Salem, Allen, & Fahrbach, 2001; Glisson & James, 1992). Collaboration results in multiple services that cannot be delivered by organisations acting alone (Gray, 1989; Imperial, 2005).

Malaysian public disaster agencies are traditionally government-driven, risk-averse and apply a top-down approach when responding to disasters (N. W. Chan, 1995). It is noteworthy that the overall disaster response leadership in Malaysia is always civilian-led (e.g., government agencies or local governments). That is, a disaster response with military providing central leadership in disaster rescue and relief as seen in other countries (Liao, 2012; D. S. Miller, Pavelchak, Burnside, & Rivera, 2008) is not common in Malaysia. Nevertheless, Malaysian military forces' role in humanitarian assistance and disaster relief, particularly related to aspects of mobilisation of human resources, logistics and coordination among agencies, is widely recognised (Idris & Nizam Che Soh, 2014).

Aspects of the collaborative approach are also evident in Malaysia's disaster response approach. Research suggests the collaborative approach is more regularly applied on activities or programmes prior to the onset of disaster (Fisk, Good, & Nelson, 2019; Moshtari & Gonçalves, 2017; Thomson & Perry, 2006). However, when disaster strikes, the command and control model is the prevailing model in Malaysia (N. W. Chan, 1995; Chong & Kamarudin, 2018), but a more collaborative approach is being increasingly applied as inspired by the concept of new governance and new public administration (Goldsmith & Eggers, 2004; Kettl, 2005). Malaysian public disaster agencies found the collaborative approach is conducive in engaging with potential partners, strengthening public accountability and mutual learning (personal conversation with participants).

2.9. Chapter summary

Though public disaster agencies are increasingly collaborating with diverse partners to handle disasters (Kapucu & Garayev, 2011; Waugh Jr & Streib, 2006), by no means has collective action become the 'panacea' for natural disaster responses. This chapter reviewed the extensive literature on collaboration, emergency and disaster management to understand the definitions, concepts, challenges and applications of cross-sector collaboration in disasters between public and non-public actors, including disaster aid recipients. To add to this body of knowledge, this research investigates the barriers to cross-sector collaboration in disasters. The next chapter discusses the methodology, research design, study context, and the participant selection strategies and techniques to collect data for this study.

Chapter 3: Research methodology

3.1. Introduction

In this chapter, I explain and outline my assumptions, methodological approaches and illustrate why a case study approach is most suited for this study. First, I discuss how my stance on ontology and epistemology guided the research design. I describe my study participants and the sampling techniques. I then outline the data collection techniques, including the interview protocol development and how I collected insights from key informants through semi-structured interviews. I conclude the chapter by discussing approaches to strengthen the findings' validity and reliability. The following chapter clarifies how the data are analysed with qualitative research tools.

3.2. Ontological and epistemological considerations

Throughout the process of designing and conducting this study, I was aware of my experience of numerous floods in Malaysia. I have spent many years in the private and intergovernment sectors. I developed a growing interest in understanding the rise and consequence of hazards, natural disaster management, disaster response, public administration and the meaning of catastrophic events to society and academics. From the private sector, I moved to the UN to become an officer with duties that included the promotion of public-private partnerships and the utilisation of information and communication technology (ICT) for disaster risk reduction (DRR). More recently, I was an officer in an ASEAN intergovernmental body that coordinated and provided assistance to disaster-affected ASEAN member states. I oversaw its administration, project and programme development. Therefore, I conducted this study, not by observing from a distance, but as a concerned citizen of the contexts I was examining.

3.2.1. *Ontology*

Ontology is critical in research because it serves as one of three major philosophical elements of research: paradigm, ontology and epistemology. Together, these beliefs guide my research design in a search for what can be known, how we arrive to know, and all processes in between before representations and findings are finalised (Leavy, 2014). The Oxford Handbook of

Qualitative Research defines ontology as "a philosophical belief system about the nature of social reality, including what we can learn about this reality, and how we can do so" (Leavy, 2014, p. 3). Ontology includes the philosophical assumptions and beliefs employed by the researcher in the pursuit of knowledge (Schwandt, 2007) and a study of social reality, which emerges independently from the take-it-for-granted human interpretation and understanding (Ritchie & Lewis, 2003). I recognise that my knowledge is incomplete and can be erroneous (L. D. Peters, Pressey, Vanharanta, & Johnston, 2013).

I employed a critical realist ontological stance to study the existing knowledge (the *being* stage) and, from this, what can be known further (Latsis, Martins, & Lawson, 2007). I acknowledge that meaningful knowledge is not generalised based on the large scale of an event or mass behaviour of particular society (Bhaskar, 2002). Instead, I am more concerned about causal relationships between individuals and groups, and how these relationships relate to other relationships in a particular setting (Bhaskar, 2002) as and when an event unfolds (Hartwig, 2007; L. D. Peters et al., 2013).

3.2.2. *Epistemology*

Epistemology is related to a thinking process that seeks clarity on the relationships between what one knows and perceives (Guba, Lincoln, & Lynham, 2011). An epistemological stance shapes a researcher's approach to query what is knowable, and how to pursue further knowledge (Daly, 2007). Leavy (2014) argues that it is the relationships between researchers and participants throughout research activity that co-creates new knowledge. In brief, epistemology is about study to understand knowledge's nature and justification (Schwandt, 2007). I am drawn to Daly's (2007) view that the primary principle of any research process is its epistemological considerations. Three considerations apply to my stance as a researcher. First, I am fallible but expect and am determined to conduct research with integrity, underpinned by my values and beliefs. Second, defending my integrity in employing epistemological considerations may be challenging, but it is my responsibility to do so. Third, epistemology is important because it brings my values to the forefront of the study (Daly, 2007).

I view the continuum of epistemological position between objectivism and subjectivism. My epistemological standpoint is not limited to objectivism that supports conclusive knowable reality (seeking truth by reasoning), or subjectivism that believes knowledge is created in accordance to the inquirer's perceptions and understandings (Daly, 2007). In addition, axiology, which refers to value judgements, moral conduct and ethics, also influences the way I design

research strategies (Denzin & Lincoln, 2011). My values shape the way I scrutinise plausible reality through the use of data collected in an authentic environment (Guba et al., 2011).

As a reflective researcher, my ontological and epistemological stance makes clear my choice of a research design. I have taken a critical realist approach and not constructivism to conduct this empirical study. Critical realists assert that all knowledge is error-prone; ideas and knowledge have causal relationships in a socially structured world (Bhaskar, 2002; Horowitz & Camp, 2006; L. D. Peters et al., 2013). When conducting the study, I investigated phenomena from multiple perspectives. I examined complex dialectical relationships between public and non-public actors, and the relational factors and causal powers that led to the formation of a new relationship (i.e., collaboration between organisations and individuals) and not others (L. D. Peters et al., 2013). My experience and world view that I can be mistaken in my understanding of knowledge shape the basis of this research approach (Creswell, 2014). In addition, my personal, professional, and political experience and commitments influence the way I see the world (Leavy, 2014; L. D. Peters et al., 2013).

In contrast to critical realists, social constructivists do not believe causal powers in social structures. Instead they suggest that social structures and systems are informed through social interactions such as language, roles and positions (Edvardsson, Tronvoll, & Gruber, 2011). Social constructivists do not simply accept social structure as real because they claim such social structures are purposefully constructed by researchers and theorists (Latour & Woolgar, 1979; L. D. Peters et al., 2013). This empirical study is conducted in a natural setting where participants respond in the way they see the world. Participants' behaviour and responses cannot be predicted or constructed, therefore I am not taking the constructivists' approach for this study. The interpretivist and non-reductionist nature of critical realism ontology is particularly suitable for an empirical study investigating the dynamic and unpredictable phenomenon of collaboration in natural disasters (Harré & Bhaskar, 2001; L. D. Peters et al., 2013). This is because the interpretivist approach emphasises the meanings derived from events or activities, as well as the interactions among chosen participants and between the researcher and the participants (Schensul, 2008).

Some scholars maintain that researchers should not be too ambitious in applying traditional epistemological tenets. Being too compliant risks the propensity to suppress cognitive judgment (Horowitz & Camp, 2006). I therefore exercised some flexibility and avoided over-interpreting the relationships between individuals or organisations. Instead, I documented their

relationships the way I noticed them. As a researcher, I am not the sole authority in this study; I work together with the participants who mutually contribute to knowledge creation (Leavy, 2014). I acknowledge that nothing is absolute in nature and that knowledge tied to anything particular in nature will never be fully comprehended (Guba et al., 2011). I am also mindful of accepting my own limitations throughout the research leading to a more robust philosophical value (Horowitz & Camp, 2006); these arguments exemplify the importance of upholding integrity in research (Daly, 2007).

3.3. Research design

Social science researchers have several research design options (Creswell, 2013, 2014) or inquiry strategies (Pelias, 2011). These include qualitative, quantitative or some combination of these two research approaches. Research design essentially provides "specific direction for procedures" (Creswell, 2014, p. 12). Qualitative and quantitative approaches both have their strengths. A qualitative approach is useful to build theory in inductive research (Huy, 2012), and enables the researcher to delve into participants' everyday life and attain a rich context within a particular phenomenon by interviewing them (e.g., local government's response following a disaster) (Yin, 2016). A quantitative approach allows the researcher to address statistical requirements by collecting a wide range of data from a large number of participants. By collecting data through a survey, *inter alia*, a quantitative approach allows participants to share sensitive information comfortably without meeting the researcher in person (Creswell, 2014). Researchers who conduct sequential or transformative research will likely consider mixed methods (Creswell, 2013, 2014). A mixed method approach has the strengths of complementarity and triangulation by converging both qualitative and quantitative data that is useful for cross-validation of the study (Hesse-Biber, 2010).

In this study, I use a qualitative approach. Given that cross-sector collaboration in extreme environments is scarce, an emerging research method is most appropriate (Charmaz, 2008; Corbin & Strauss, 2008; Creswell, 2013; Miles, Huberman, & Saldaña, 2014). My critical realist ontological, reflective epistemological and axiological stances influence the way I opted for a qualitative approach instead of a quantitative or mixed approach. Because I examine the causal relationships between participants as and when they experienced an unfolding post-disaster, the qualitative approach enables me to study this unique phenomenon by gaining an insider's perspective (Phillimore & Goodson, 2004). In this study, the unique event is the aftermath of floods. The events are not necessarily of the largest scale or ones that result in

massive social behavioural repercussions to an entire society but are ones that are significant enough to advance knowledge. The chosen events, floods, will be discussed in detail under section 3.5 when elaborating on the case study strategy. I am determined to conduct this study with integrity and am aware that participants are not simply tools to generate results for the study but are co-creators of new knowledge based on their interactions with organisations, networks and individuals during a post-disaster response phase. Often, I ask myself if I have presupposed assumptions or generalisations when entering this study; am I upholding my ethical values by integrating only the views of participants and not mine into the study, or preserving as much as I could to bring to the forefront the real-life experiences of participants into this study? In this regard, the inductive, interpretive and flexible attributes of a qualitative approach make it a suitable research strategy matching the demands of the situation (Charmaz, 2008).

The interpretive nature of qualitative research permits me to collect rich data and understand the views that make sense regarding cross-sector collaboration from the participants' perspective (Pratt, 2009). Additionally, a qualitative research approach allows me to explore complex issues and to understand the particular context in which research participants exist in their natural setting (Liamputtong, 2013; Liamputtong & Ezzy, 2005). A qualitative approach also allows me to record the varying views of interviewed participants that cannot be captured in an inflexible survey (Liamputtong, 2013; Liamputtong & Ezzy, 2005). In a nutshell, I chose a qualitative approach because this type of research design can produce a broad, detailed description of what is meaningful for participants in their interpretation (Rynes & Gephart, 2004). I use a qualitative approach to investigate the barriers to cross-sector collaboration in disasters.

Social science qualitative researchers use narrative, phenomenological, ethnographic, case study (Creswell, 2013) and ground theory methods (Charmaz, 2006, 2014; Glaser & Strauss, 2017) to conduct research. This study uses case study approach which will be discussed in section 3.5. This study does not use grounded theory as a method to conduct the study; it uses grounded theory tools such as coding, memoing, constant comparisons and theoretical saturation only to analyse the data systematically (Charmaz, 2008). Consistent with the qualitative research design, grounded theory tools offer useful, practical guidelines "to analyse qualitative data to construct theories 'grounded' in the data themselves" (Charmaz, 2014, p. 1). The following section discusses the research method and reasons for it.

3.4. Methodology

Research methodologies provide the principles for researcher to produce data for analysis (Carter & Little, 2007; Liamputtong, 2013). Methodology is a blueprint consisting of assumptions, beliefs, principles and standards that guide the researcher in analysing his or her work and the choice of research methods (Schensul, 2008). Crotty (1998, p. 3) defines methodology as "the strategy, plan of action, process or design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes". Compared with methodology, research methods refer to the protocols and techniques to collect and analyse data and multiple evidence sources (L. B. Christensen, Johnson, & Turner, 2014; Wilson, 2016). The methodological approach and the particular methods to collect and analyse the data can be decided (Crotty, 1998; Daly, 2007) only after confirmation of a research design.

A qualitative researcher has a responsibility to provide "methodological justification" (Avis, 2003, p. 1003) because methodology provides the framework that leads to rigorous, convincing stories based on evidence without preconceptions (Liamputtong, 2013; W. L. Miller & Crabtree, 2005). With this in mind, my ontological and epistemological assumptions will inevitably influence my choice of methodology. A particular research method is chosen once methodology confirmed. There are various methodological frameworks that qualitative researchers may apply: ethnography, phenomenology, postmodernism, grounded theory and case studies, amongst others (Creswell, 2014; Liamputtong, 2013).

3.5. Case study strategy

This research uses a case study approach to investigate the under-researched phenomenon of cross-sector collaboration in disasters. Case study research is common in social science, education, anthropology, legal, public health, social work, nursing, and community planning (Liamputtong, 2013; Yin, 2014). Yin (2014) argues that case study research is a social science approach that "investigates a contemporary phenomenon (the "case") in its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident" (p. 2). Nevertheless, having chosen a case study approach for this study does not imply that other methodological frameworks are less effective in examining emerging phenomena. A case study is preferred because it can address the research questions why collaboration in disasters is challenging as the event unfolds (Yin, 2014). Case study research is useful to investigate human interactions by exploring participants' experiences (Rynes & Gephart, 2004; Van Maanen, 1979). A case study also has strength to generate novel theory and uncover new

insights from the comparison of contradictory evidence (Eisenhardt, 1989). Additionally, the inductive nature of case studies is conducive to the generation of new theory via repetitive cycles by ordering case data, emerging themes and theories, and the literature (Eisenhardt & Graebner, 2007). This is why I used the case study approach to examine the little known phenomenon of collaboration in disasters (Creswell, 2013; Stake, 2007; Yin, 2014).

Chapter 2 revealed an unclear phenomenon with opposing views: collaboration in disaster management is important and increasingly demanded, but acknowledges that collaboration is hard to develop and maintain. This paradox requires further investigation. I began designing a research question by seeking a deeper insight into the barriers to collaboration in disasters from participants to inform the study's findings. I then considered the relevance of data, what data to collect, and the approach to analyse the data (Philliber, Schwab, & Samsloss, 1980; Yin, 2014). In so doing, I was able to discover, learn or solve problems arising from unknown phenomena (P. Foster, Hammersley, & Gomm, 2013; VanWynsberghe & Khan, 2007).

Conventional qualitative research, such as a case study, is mainly descriptive, describing how theory operates in specific examples (Eisenhardt & Graebner, 2007), or portraying how social experience is created (Rynes & Gephart Jr, 2004). Commonly, case study research focuses on analysing a narrative interspersed with participants' quotes (Eisenhardt & Graebner, 2007). In this regard, qualitative researchers who use a case study approach often find it challenging to find a balance between rich stories and rigorous theories (Eisenhardt & Graebner, 2007). Though detailed coding of data from case study research is less common, to address the above challenge, I use Saldaña's (2016) coding method to analyse qualitative data based on a critical-realist lens. The heuristic and linking characteristics of coding allow qualitative researchers to capture the essence and stories from participants as they see the world (Saldaña, 2016). Coding is heuristic, exploratory and capable of making new meanings from one event to another (Fuller & Goriunova, 2014). Coding is also capable of linking, connecting data to ideas, and from the ideas to all relevant data associated with the ideas (Richards & Morse, 2013). Thus, coding qualitative data is useful to initiate rigorous analysis (Saldaña, 2016). For complementary analytical purposes, I use summary tables to catalogue salient codes, categories and themes to make clear the synthesis of case evidence (Eisenhardt & Graebner, 2007). These tables are important for traceability and testability of the theory (Eisenhardt & Graebner, 2007). Through synthesising the process of collective data in the form of a category, theme or concept, the researcher finds a "consolidated meaning" (Saldaña, 2016, p. 10).

Eisenhardt and Graebner (1989; 2007) posit that there are several potential advantages in using case studies to investigate an unclear contemporary phenomenon such as cross-sector collaboration in disasters. The most prevalent advantage is that building theory from cases is likely to be empirically valid and accurate because theory-building is closely tied to the evidence from the data collection and analysis (Eisenhardt, 1989; Eisenhardt & Graebner, 2007). If the evidence is derived from different strands it increases the likelihood of developing a novel theory. Therefore, in addition to interviews, I investigated official and news reports. To some extent, I also observed body language and present living conditions, which are all central to qualitative research (Wertz, Charmaz, McMullen, Josselson, & McSpadden, 2011). During the interviews, I received some official reports from participants. Because of the sensitivity of these documents, I have chosen not to quote them in the study. However, the essence of these official documents was integrated into my analysis. Subsequently, the primary data collected from in-depth interviews and the secondary data (i.e., operation status reports, regulations and standard operating procedures) are triangulated to reflect the different realities (Liamputtong, 2013; Liamputtong & Ezzy, 2005; Stake, 2007). The emergent theory is likely to be testable with constructs and hypotheses.

Case study research includes both single and multiple case studies. Multiple case studies, not chosen for this study, have more than one case in the content of the same study; the approach is suitable for comparisons across settings where it is impossible to glean answers from a single study (Taylor, 2013; Yin, 2014). A multiple case study, like a single case study, is suited for theory-building research, since diverse findings may lead the researcher to discover the underlying reasons through juxtaposition. Nevertheless, single case study designs (Shadish & Sullivan, 2011) and single case data analytical techniques have been increasingly used during the last decade (Manolov & Moeyaert, 2016). A single case study design is suitable for building theory, assessing unique cases, representative or typical cases, revelatory cases and longitudinal cases (Yin, 2014). A single case study design is also suitable for testing a well formulated theory (Yin, 2014), although that is not the intention of, or relevant to, this study.

Guided by Yin's (2014, 2016) process of analytical generalisation, this study works towards theory building with a single case. Single cases are increasingly used because they are outstanding examples, distinctively revelatory and suitable for uncommon research (Eisenhardt & Graebner, 2007). In part, this explains why I chose a single case study to examine the barriers to collaboration in disasters (Yin, 2014). I first explore how the study's findings are likely to

inform particular concepts (i.e., collaboration following a natural disaster) and then see how similar concepts can be replicated in other situations (i.e., collaboration following a human-induced conflict) (Yin, 2016). In doing so, the theoretical concepts are generated from a more generalised perspective embedded in a particular qualitative pattern (Halkier, 2011), which Yin (2014, 2016) asserts is useful to inform either support for or challenges to present theory.

3.5.1. *Case study context*

Between December 2014 and January 2015, Malaysia experienced its worst floods ever recorded (H. Alexander, 2014; "Malaysian government under fire for flood response," 2014). This mega flooding became the catalyst for change in the Malaysian disaster management landscape (Kaos, 2015). Record-setting torrential rains, high tides, and, in part, environmental degradation including landslides, extensive logging (R. Davies, 2015; Sulaiman et al., 2017) and a lack of preparedness culture (Mokhtar, 2015) contributed to seven of the thirteen states, i.e., Kelantan, Terengganu, Pahang, Perak, Johor, Perlis and Sabah, being inundated (IFRC, 2014). Among the flood-affected states, the east coast states of Kelantan, Terengganu and Pahang were severely affected; among all states, Kelantan was the worst hit by the floods. In the three states, most dwellings were submerged by the floods (IFRC, 2014). Over 200,000 people were evacuated and though the news reported that at least 21 people killed, the official number is fewer (R. Davies, 2015). Over half a million people were affected, a relatively high proportion of a country with a 31 million population (H. Alexander, 2014; Mohd Yassin, 2015).

In early January 2017, about 24 months after the mega-flooding, I conducted field interviews in Kelantan, the worst flood-hit state. During data collection, a second flooding occurred in several east coast states including Kelantan ("Bridge to be built", 2017) . Although the scale of the flooding was less severe than the December 2014 flood, this 2017 flood was among the first involving an official disaster response to a mid-scale flooding after NADMA was operationalised in October 2015 (Zakaria & Sim, 2017). It was impossible to separate the participants' two experiences of flooding they had recently experienced.

This study focuses on the disaster response to the two floods (Bingham et al., 2008). Among the disaster response activities are rescue and relief actions in the two floods as performed by the public disaster agencies and their wider partners. These two floods resulted in interactions, communications and forms of cooperation among multiple stakeholders; some became research participants in this study. Disaster response is the phase that attracts diverse collaborative partners. Because this study investigates cross-sector collaboration, which

requires the views of varying partners, collecting data in the response period was deemed most suitable compared with other disaster management phases.

3.6. Data collection overview

Data collection began after completion of the interview protocol and question design. The interview process and interview question development will be discussed in Section 3.9. Two pilot interviews were conducted in November 2016 after the Human Ethics Committee of the University of Canterbury approved the study on 15 November 2016. The Human Ethics Committee approval letter is in Appendix 3A.

Two pilot interviews were conducted by audio-visual conference with participants from NADMA and an ASEAN regional organisation. The pilot interviews are important not only to practise interviewing (Dilley, 2000) but also to evaluate the overall design, relevance and clarity of the interview questions. They also provided an opportunity to improve and strengthen the interview questions before conducting interviews with key informants. I started collecting data from key informants in January 2017; they shared with me their experiences in the mega flooding of December 2014, and they highlighted their experiences in responding to a recent flood. Therefore, in the middle of data collection, I changed my plan to include both floods in the study. In hindsight, 83% (n=25) of all participants had experienced, had knowledge of or were involved directly or indirectly in the December 2014 flooding in Malaysia; whereas 77% (n=23) of the participants had experienced the January 2017 flooding alone. Combined, 67% (n=20) of the participants had experienced both floods.

In this study, semi-structured interviews were the primary method of data collection. Interview data and secondary data obtained from archival records, government and organisations' documents, and news records offered complementary opportunities for data gathering and analysis. Semi-structured interviews are flexible, allowing alterations to interview questions and, in most cases, questions evolved naturally during the interview (Liamputtong, 2013; Liamputtong & Ezzy, 2005). Throughout the face-to-face interviews, I paid special attention to listening, observing body language and understanding content, emotions and 'silent voices' (Dilley, 2000). The formal interviews were conducted only after gaining experience from pilot interviews and the protocols for interviews had been finalised. The interview protocols and interview questions are in Appendix 3B.

Except for three interviews that were not audio-recorded for the interviewees' personal reasons, all interviews were digitally audio-recorded. Six (20%) interviews were conducted in Malay, three (10%) were in Mandarin Chinese, and the rest were in English. For interviews not in English, I translated them into English. Later, I transcribed and analysed the interview data, leading to transcripts of approximately 100,000 words. Appendix 3C shows the data collection milestones including the interview methods and follow-ups deployed sequentially across a one year data collection period from November 2016 to November 2017.

Twenty-four interviews (80%) were conducted face-to-face at the participants' office, and for four participants, at their residence. Six interviews (20%) were conducted through audio-visual conferencing facilities. I understand and appreciate the advantages in collecting data from participants in person at their preferred location and time. However, to not cause unnecessary pressure on participants, in terms of their time and commitments, audio-visual conferencing was the most suitable, practical and acceptable alternative means to collect data for both the researcher and the participants.

I acknowledge the logistical and administrative challenges in conducting data collection across a range of organisations and individuals within and beyond the Malaysian border. I have cultural and language advantages in conducting this qualitative research. I am a Malaysian national who has served in a regional intergovernmental organisation based in Jakarta, Indonesia, since 2012. That job description related to engaging public disaster agencies in the region. This experience helped establish trust and good working relationships with key disaster management agencies' decision makers who took part in this study. In addition, my proficiency in the national languages of Malaysia and Indonesia facilitated data collection, including communication with non-participant office administrators, and subsequent interview data translation as necessary into English. Follow-up interviews are beneficial to refine and expand the emerging theory (Draucker, Martsolf, Ross, & Rusk, 2007). Therefore, I followed up with participants eight to ten months after initial data collection to seek their verification of the interview transcripts and let them reflect on their views or clarify specific developments, especially with some key strategic and operational informants.

3.7. Overview of the study participants

Thirty participants were recruited because their experience is important to this study and is likely to co-create the knowledge this study aims to achieve. The study began with selective sampling to identify potential research participants based on a set of criteria (Coyne, 1997).

The sampling criteria included a preference for cross-sector representation (i.e., government and NGOs), levels of hierarchy (i.e., central and state-level government agencies), disaster management experience (i.e., disaster aid givers and recipients), and the participants' society role (i.e., key strategic and operational decision-makers in disaster management and citizens affected by disasters). I interpret the terms *strategic* and *operational* loosely. In this study, *strategic* leaders are those who held senior positions in their organisations (e.g., departmental head, chief of state government agencies or chief executive of organisation). They provide leadership to a group of employees and make important long-term and strategic decisions during non-emergencies and emergencies. *Operational* leaders refers to individuals including employees of public disaster agency, NGOs or regional organisations. They usually have no employees reporting to them during routine and non-emergency situations, though some provide leadership to a limited number of subordinates. Nonetheless, these *operational* participants provide leadership to a larger group of first responders, volunteers or local government officials and make important decisions, often *ad hoc* and spontaneous, when they are deployed to a one-off disaster response. These strategic and operational decision makers are key informants. All key informants, except one who was new to disaster management with less than two years' experience, held various strategic and operational positions and had at least five years disaster management experience. All participants took part in this research voluntarily and provided written consent before the interviews. A sample of information sheet and participant consent form is in Appendix 3D.

Natural disasters require a coordinated response among a host of actors including public and non-public, established and less-established organisations, to help people in need after a disaster. They are referred to as the stakeholders in disaster management. These stakeholders are my research participants and key informants. The participating entities are as follows:

a) government sector (i.e., ten participants from NADMA and members of other assisting government agencies);
b) non-government sector (i.e., nine participants from major local and foreign NGOs);
c) UN specialised agencies (i.e., two participants from UN agencies involved in humanitarian assistance and emergency logistics);
d) regional intergovernmental organisations (i.e., three participants from ASEAN organisations); and
e) six Malaysian nationals who had experienced a disaster.

This study acknowledges that other private organisations, philanthropic organisations, media, scientists and academics also play important roles in disaster management. However, not all

key stakeholders were interviewed. Instead selected leaders or decision-makers from humanitarian aid agencies, or participants from the major disaster management institutions most relevant to the study were chosen for this study.

3.7.1. *Selection of participating organisations*

This section profiles the organisations selected to contribute to this study. In sum, five groups of organisations were involved: a) NADMA, as the focal organisation, b) assisting government agencies, c) NGOs, d) regional intergovernmental organisations, and e) UN specialised agencies. Aid recipients comprise a group of participating individuals who will be discussed in Section 3.7.2. The five groups were chosen because each played complementary, critical roles in delivering effective disaster management. NADMA provides overall leadership and direction and facilitated coordination between the public and non-public actors during the official disaster response phase. The assisting government agencies render professional and technical support (e.g., search and rescue, emergency medical services) that no ordinary agencies can perform. NGOs complement the relief efforts initially led by government actors even after the official relief operation concluded. In disasters, regional intergovernmental organisations stand in solidarity with fellow member states with similar organisations. These organisations play an important role in providing quick resources and logistical support as well as sharing information among member countries. The UN specialised agencies serve as a bridge between the disaster-affected country and international society. These UN agencies share best practice and build the capacity of countries against natural disasters; more critically, UN's rich network can facilitate a country reaching out to multiple resources not available (the desired quantity, a particular specification or needed in a specific time) in a disaster-affected country, especially in a large-scale disaster. In this study, the views of only participants from the five groups of organisation are collated, juxtapositioned and analysed; private sector organisations, scientists and academics are not included in the study.

Participants from the groups are referred to as informants. Key informants were initially identified from my previous contact with them when participating in various official activities on regional disaster management. The snowball technique (Creswell, 2013, 2014) was used to reach other individuals who have experience in recent disaster responses. Of the 30 individuals interviewed, 24 are from 12 organisations; the others were interviewed as individuals who have experienced a disaster. As the participants are of differing backgrounds or represent organisations of varying specialisation, experience and priorities in disaster management, they

interpret their experiences in disaster management differently from one another. Table 3.1 describes the selected groups of organisations and individuals.

Table 3-1: *A description of the selected organisations and individuals*

Category of Participant Group	No. (%) of Participants	Number	Descriptions of participants in the groups
NADMA	4 (13.33%)	1	Employees of NADMA, the national focal point and leading agency of disaster management in Malaysia including those with strategic and operational backgrounds.
Assisting government agencies	6 (20%)	3	Non-NADMA employees but government officials from other line agencies that support and work alongside NADMA in disaster response and relief operations at the national, state and district levels, i.e., Health Department, District Officers, and other first response agencies.
NGOs	9 (30%)	4	Fulltime employees and volunteers who held senior positions in NGOs. The participating NGOs consist of both major local and international organisations with offices or branches in Malaysia. The international NGOs consist of both nationals and non-nationals of Malaysia.
ASEAN regional organisations	3 (10%)	2	Non-Malaysian nationals and officers from intergovernmental organisations and committees under the auspices of ASEAN, with secretariats in Jakarta, Indonesia.
UN specialised agencies	2 (6.67%)	2	UN officers with specialisation in disaster management and humanitarian logistics. Consists of both nationals and non-nationals of Malaysia based in UN offices in Malaysia.
Aid recipients	6 (20%)	n.a.	Disaster-affected individuals who experienced floods in Malaysia and received aid either from government or non-government sources.

Malaysia National Disaster Management Agency (NADMA)

NADMA is the newly established focal coordinating government agency ("Government establishes", 2015) responsible for disaster management in Malaysia with a mandate from the central government (NADMA, 2015). It was established in August 2015 and operationalised in October that same year. Some argue that it was the slow and disintegrated official disaster response and relief to 2014's flooding ("Malaysian government under fire for flood response," 2014) that ultimately led to the restructuring of the Malaysian national disaster management system and the formation of NADMA (Chong & Kamarudin, 2018; Zakaria & Sim, 2017). NADMA consists of a network of four entities: Disaster Management Division of the National Security Council, the Post Flood Disaster Recovery Unit of the Prime Minister's Department, the Special Malaysia Disaster Assistance and Rescue Team (SMART) and the National

Disaster Command Centre (Pereira, 2018). These independent entities, which previously reported to various decision makers, are now united under NADMA with a new reporting line, mandate, leadership and centralised management under the auspices of the Prime Minister's Department (Pereira, 2018). NADMA consented to be the focal organisation for this study and permitted the use of the term, NADMA, in the thesis and potential future publications.

The Director-General is the highest officer in NADMA and is supported by three Deputy Directors-General who oversee the three major divisions: Planning and Preparedness, Operation, and Post-Disaster. Before October 2015, it was the Disaster Management Division of the National Security Council that was responsible for matters related to disaster management. Disaster management was only one of the many National Security Council's functions that include national security, anti-terrorism, border management and intelligence. Subsequent government restructuring related to disaster management include the shifting of the Civil Defence Department from the Home Affairs Ministry and realignment with NADMA under the auspices of the Prime Minister's Department in 2015. For the first time, both NADMA and the Civil Defence Department, the former being the central coordinating agency and the latter the experienced first responding agency, are now under the supervision of one minister. In September 2016, the Civil Defence Department was renamed Civil Defence Force ("Civil Defence Department", 2016).

The inception of NADMA implied that it replaced the Malaysia National Security Council in playing a central coordinating role for all matters related to disaster management (Chong & Kamarudin, 2018; NADMA, 2015). However, as a newly formed networked organisation with limited resources, funding and credibility, NADMA counts on other peer agencies to complement its strengths (personal conversation with a participant). When a major natural disaster strikes, NADMA provides leadership and guidance to the peer agencies for implementing central government's disaster response plans and actions. Nevertheless, these peer agencies have their respective organisational priorities and programmes during normal non-disaster days (personal conversation with a participant).

Assisting government agencies

At the time of this study, NADMA operated exclusively at the national level; it did not have state or district offices. To ensure that central directives are implemented at state and district levels, NADMA interacts with and counts on the support of other government ministries and agencies for coordinated, effective disaster management. Specifically, for every natural disaster

at the national level, NADMA teams up with at least 18 disaster management counterparts (e.g., Police, Health Department, Environmental Department) in the government to form a National Disaster Management and Relief Committee (CFE, 2016; Sulaiman et al., 2019). This committee becomes a network of disaster management authorities. This study defines the committee members or national disaster management organisations loosely and hereinafter refers to them as 'assisting government agencies'. This network is involved at state and district level where disasters have occurred (Sulaiman et al., 2019). If a disaster occurs at a district level, district officers are mandated to provide leadership to the District Disaster Management and Relief Committee. In the Malaysian disaster management context, public agencies focus on seven service themes that are beyond the capacity of a single organisation. These services are: (1) post-disaster search and rescue; (2) health and emergency medical services; (3) media and communication; (4) general support to public; (5) security control or to restore order; (6) welfare and social services; and (7) warnings and alerts (Sulaiman et al., 2019). Appendix 3E details the public agencies involved in disaster management in Malaysia.

This study includes the views of several first-responders of assisting government agencies who played critical roles in first response and disaster relief; such agencies are responsible for search and rescue and emergency logistic arrangements. Other assisting government agencies, such as the Social Welfare and Health Departments, Police, and the Fire and Rescue Department, also play important roles but are not included in this study. Local government officials, religious teachers and village heads (non-members of national disaster management organisations) are also important actors at both district and community level but are not included in this study because of accessibility constraints.

NGOs

This study focused on both local and foreign-affiliated NGOs with offices in Malaysia. An example of a participating major local NGO is one with thousands of volunteers nationwide that, over the years, has gained a reputation as a competent, experienced aid provider with a surfeit of resources including funding, technical capability and networks. This participating major local NGO had longer history and, to some extent, has a richer experience in managing disasters than NADMA. This NGO complemented the government's efforts in several ways, *inter alia*, distributing relief items including food, clean water and hygiene kits, providing counselling and emergency medical services to flood survivors with volunteer doctors, nurses and trained volunteers on site, and organising community-based disaster risk management

programmes targeted at building overall community resilience to disasters in selected communities.

In addition to the major local NGO, two interviewed NGOs are national branches of overseas organisations. One is a faith-based, not-for-profit organisation and the other is a national branch of the world's largest volunteer-based humanitarian movement. The faith-based NGO is a branch of an international religious foundation with a presence in over 50 countries. After the 2014 severe Kelantan flooding, this NGO provided relief items, funds, temporary shelter and continuous support to the livelihoods of affected individuals for over a year. The second one, the national branch of the world's largest humanitarian movement, is different from other overseas-affiliated NGOs because it has an auxiliary status on a legal basis to support the government in the humanitarian field. When devastating flooding paralysed the eastern states in December 2014, the Malaysian government specifically requested this NGO to mobilise volunteers for rescue and relief operations. (Citations are not included to keep these NGOs anonymous.)

To obtain the perspective of an international not-for-profit organisation with experience in disaster management, an international NGO with its Asia-Pacific regional office in Malaysia, was also interviewed. This international NGO assists and advises its geographically dispersed national branches on matters related to relief and development programmes through regional cooperation. All local and overseas-affiliated NGOs interviewed are directed, administered and operated by Malaysian nationals. The international NGO is directed by foreign nationals with transnational commitments to serve Malaysia and other member countries under its jurisdiction.

ASEAN regional organisations

In addition to the UN organisations and NGOs with an international affiliation, other external partners engaged with Malaysian public disaster agencies are the intergovernmental organisations and thematic committees under the auspices of ASEAN. ASEAN organisations such as the one coordinating humanitarian assistance operations, are among the most preferred overseas organisations to Malaysian public managers in the disaster management context (personal conversation with participants). The reasons are three fold. First, the Malaysian government has a legally-binding agreement with these ASEAN regional organisations (ASEAN Secretariat, 2005). Second, the Malaysian government has a representative on the governing board of the ASEAN organisation. Third, Malaysian public authorities have frequent

formal and informal interaction with ASEAN organisations that has developed into a high degree of mutual trust (AHA Centre, 2015a; ASEAN Secretariat, 2005). The ASEAN organisations support NADMA at the central coordination level and often work alongside the UN specialised agencies in mobilising relief items or sharing information. NADMA, as the Malaysian disaster management focal point, often works closely with the regional organisations. This scenario is evidenced by the ASEAN organisation being the only foreign organisation allowed by the Malaysian government to respond alongside the public disaster agencies to the Kelantan flooding between 2014 and 2015 (AHA Centre, 2015a, 2015b).

UN specialised agencies

Malaysia has been a member state of the UN since 1957. Currently, Malaysia has a presence on several UN organisations including, but not limited to, the United Nations Children's Fund (UNICEF), World Health Organisation (WHO) and United Nations High Commission for Refugees (UNHCR), in which, together, they form the UN Country Team to support Malaysia to achieve overarching goals in socio-economic development, international integration and public governance. This study includes two participants from the UN Country Team members based in Malaysia with specialisation in humanitarian aid and emergency logistics. One is the superior organisation to the other, a regional emergency supplies logistical hub for Asia. The Malaysian government works closely with the UN through the UN Country Team led by the UN Resident Coordinator, who is also the head of the UN Development Programme (UNDP). The initial study plan was to include the UN Resident Coordinator in Malaysia, the highest ranking UN official based in Malaysia. However, when interviews were organised and conducted in Malaysia at the beginning of 2017, the former UN Resident Coordinator had left and the successor did not arrive until later in the year. Therefore, I focused on interviewing UN Country Team members with strategic and operational disaster management experience. The UN specialised agencies in Malaysia have demonstrated high expectations of NADMA (personal conversation with a participant). In many ways, the Malaysian government's efforts to achieving its vision as the champion in humanitarian assistance and disaster relief in Southeast Asia is well acknowledged by international society (CFE, 2016).

3.7.2. *Selection of participating individuals*

I also interviewed individuals who have experienced disasters first-hand and received aid in the initial stage of the disaster from either government or non-government sources. Interviewing aid recipients in rural communities that were once under the seven metres of water

was not the original plan. The idea arose during data collection and was confirmed later after almost all interviews with participants from NADMA, the assisting government agencies, NGOs and the UN agencies had been completed. The need to include the perspectives of aid recipients in the study became clearer as I tried to understand how a lack of collaboration or difficulties in collaboration influenced those in need. Fortuitously, with the help of some former volunteers (non-research-participants) from a local NGO, I managed to interview six citizens who had experienced mega flooding in 2014 as well as the mid-scale flooding in early 2017. Their views are as important as those of the key informants from organisations since they were in the front line of the disasters and were aid beneficiaries. They are the people to whom the key informants from various organisations delivered their social good in disaster management.

3.7.3. *Approaching the focal organisation*

From the beginning, I intended to interview participants with a strategic and operational backgrounds. I sent an email invitation for an interview to four NDMA senior staff with whom I was acquainted; all accepted my invitation. Of these four participants from NADMA, the focal organisation, two are strategic decision-makers and the other two are operational decision-makers. When the face-to-face interviews were conducted with the NADMA staff in January 2017, NADMA was merely 14 months in operation. Not all key positions had been filled by that time. Furthermore, the number of decision-makers with strategic and operational backgrounds is generally small in public disaster agencies. This explains why only four participants from NADMA were selected for this study. It is worth noting that four is the highest number of interviews conducted in any single organisation for this study. Typically, I interviewed only the most senior two participants from a single organisation, ensuring one is from a strategic background and the other is operational.

3.8. Theoretical sampling and theoretical saturation

Theoretical sampling and saturation are key strategies in qualitative research (Charmaz, 2008). Theoretical sampling is a method of collecting data guided by the concepts or themes derived from data. Theoretical sampling is cumulative, theoretically driven and concept oriented (Charmaz, 2008; Corbin & Strauss, 2008; Glaser & Strauss, 1967). When I started collecting data, I was uncertain what kind of data that I would get or when the process could conclude. By employing theoretical sampling, I underwent a journey of collecting data from different places, people and events to maximise the opportunities for the discovery of new dimensions. Data collection and analysis go hand in hand; earlier notions inform the questions to be asked,

or what is to be observed, in subsequent interviews, hence clarifying my theoretical sampling direction (Corbin & Strauss, 2012). Theoretical sampling is not the same as sampling from studied populations and with procedures completed before data collection (Van den Hoonaard, 2008). On the contrary, researchers conduct theoretical sampling in a responsive way; it is a flexible process (Corbin & Strauss, 2012). The concept-driven nature of theoretical sampling is useful to generate theoretical sensitivity (Breckenridge & Jones, 2009). By following an analytical trail and observing the development of the unique features of the emerging theory, or even fortuitous events in data collecting, I am determined to explore the concept in depth (Breckenridge & Jones, 2009).

Initially, I aimed to explore at least four different natural disasters that happened in Malaysia. However, only two different floods, which happened in Malaysia between 2014 and 2017, were largely discussed by the participants. Two replicated cases is a modest number, but natural disasters are comparatively rare, particularly from 2014 to 2017 in Malaysia (Guha Sapir, 2019a). These two floods were chosen as cases for theoretical purposes and their probability of leading to the generation of an emergent theory (Eisenhardt & Graebner, 2007) that will allow replication consistency as and when several cases are used (Yin, 2014).

Following the theoretical sampling procedure, I took analytical steps (Corbin & Strauss, 2008) in the data collection. In doing so, the study's direction hinges on the data collection and analysis that happen simultaneously as the researcher interprets the data during the process (Corbin & Strauss, 2008). Theoretical sensitivity may happen during data collection, as an emerging idea results from an attentive process that "begins from data collection and goes on throughout the collection and analysis of data" (Daly, 2007, p. 104). During the first interview, the participant (a government agency officer) emphasised the importance of "preparedness, preparedness and preparedness" in delivering an effective and well-coordinated post-disaster response. I then asked: "With whom?, Why?, How? and What next?" Based on this awareness, I interviewed the following participants in the light of what was mentioned by previous participants and asked them the processes and challenges of cross-sector multi-stakeholder collective action toward a disaster response.

I continued collecting data until the thirtieth interview when I reached saturation; i.e., the analytical threads or concepts became saturated when the addition of new data created no properties or dimensions of further interpretive value (Charmaz, 2006, 2014). I am satisfied that the complexity and variations in category development related to the properties and

dimensions were fully addressed (Charmaz, 2006; Sandelowski, 2008) and all concepts have been identified and delineated (Bryman, Liao, & Lewis-Beck, 2004; Corbin & Strauss, 2012).

3.8.1. *Maintaining balance between selective and theoretical sampling*

I attempted to select the most representative combination of participants based on sectoral diversity, strategic and operational roles, of old and young age, and geographical variation. The diversity of the participating organisations and individuals was paramount to attain objective, balanced, genuine opinions and elaboration essential to a qualitative study.

Most study participants were leaders and decision-makers holding senior positions in their respective organisations and making strategic and/or operational decisions every day. However, I did not presume that only leaders possess insights or a complete understanding of the investigated phenomenon. There are risks that strategic leaders share only positive information to uphold the image of their able leadership or because of concern about misinterpretation of controversial issues, so I also focused on operational staff. Research efforts that focus on collecting data from diverse organisational leaders have advantages in obtaining insights from a sample group within a larger population. This allowed me to observe differences in collaboration involving organisations from dissimilar sectors, hierarchical levels, geographical locations and organisational priorities and ability to achieve common goals.

At times, after interviewing many key informants, I noticed the number of participants representing Malaysian public disaster agencies was fewer than I desired. I attempted to increase the number of research participants from Malaysian public disaster agencies but was challenged by a lack of access. Four months after 29 interviews had been conducted, I managed to arrange an additional interview with a participant from the Malaysian Armed Forces; the army was not included in the original interviewee plan. This interview turned out to benefit the study because the participant possessed an expansive disaster response experience in both Malaysia and overseas. The addition of only one participant may seem small but the data collected contributed to and strengthened the validity of the study. The decision to have one additional participant at late stage was arrived at with the idea that senior, experienced participants with knowledge of disaster management, as well being willing to share reflective experiences voluntarily, are hard to find.

3.9. Data collection

Qualitative studies have multiple levels of data collection units that Yin (2016) terms a 'nested arrangement' (p. 91). This study aims to integrate both a broader and narrower level of data collection units. At the broader level, it is a community of disaster management stakeholders; at the narrower level, it includes individuals, organisations and networks. Integrating such a breadth of data collection units is useful to achieve maximum information (Kuzel, 1992). Being aware of selecting purposeful sampling and aiming to obtain maximum variation, I deliberately interviewed participants who were likely to provide opposing views related to my study (Yin, 2016).

I was familiar with one third of the 30 research participants through previous formal contacts; all participants interviewed were at least 30 years old. I interviewed the participants according to their preferred language; no interpreter was required because I am proficient in the preferred languages. Conversing in the language familiar to participants was critical for them to share their lived stories and experience without difficulty. My proficiency in the national Malaysian language, *Malay*, was particularly conducive to data collection involving Malaysian civil servants and rural participants, though most of the research participants were also well-versed in English.

3.9.1. *Timing of the interviews*

One point to highlight is that being able to interview key informants on the last day of an official response operation could not have been more helpful for the study. I interviewed several key participants who just had reported back to their office from a recent demobilisation. Interviewing participants at this time is beneficial because their memories are fresh, minimising recall bias and increasing the probability of providing accurate data (Van den Berg, Wong, Velden, Boshuizen, & Grievink, 2012). However, collecting data soon after the end of a disaster response operation was on the pre-condition that it did not cause emotional distress to the participants. The interviews took place in various Malaysian cities (e.g., Putrajaya, Kuala Lumpur, Georgetown), townships (e.g., Kuala Krai) and villages (e.g., Manek Urai, Kampung Karangan). The villages are located approximately 338 km from my city and required over a five hour drive one way to reach them. The exception is that I interviewed two strategic participants face-to-face in a neighbouring country, as preferred by them.

3.9.2. *Developing the interview guide*

I reminded myself to enter the research journey *tabula rasa*. However, my experience in both disaster management policy options and operations may have influenced the way I designed the interview guide. At times, I may have been inclined to follow official news issued by public actors rather than non-public actors. I was also aware that the data collected at the beginning form the foundation for the theories or concepts subsequently generated (Charmaz, 2006, 2014). Therefore, from the beginning, the interview guide design is critical to collect data pursuant to the research questions.

In the initial stage of preparing for the interviews, I aimed to design interview questions that could lead to 'emerging themes' necessary to generate emergent empirical findings. In my first pilot interview via an audio-visual conferencing system, I asked the participant questions such as:

- Can you tell me about the culture of your organisation?
- To what extent does your organisation work together with other organisations?
- Usually when you work together with a particular organisation, what do you actually want from this kind of collaboration?

Not surprisingly, the first pilot interview was far from satisfactory. After the interview was transcribed, I found little insightful information and, at times, my questions were unclear and I frequently interrupted the participant while he was contemplating. Twenty days later, I conducted my second pilot interview with the same participant via a similar conferencing system. This time, I revised the interview questions as a result of what I have learned. The participant then shared his stories unreservedly despite the fact I asked fewer questions. The major questions were:

- What were you doing during your 2-week disaster response operation?
- Please tell me more about your work in the operation centre.
- Will you act differently if you meet a similar disaster response?

Through the pilot interview experiences, I was conscious that the design of interview questions was critical as they formed the basis of theory generation.

The study participants were broadly divided into 'aid-givers' (e.g., participants from NADMA and the NGOs that provide assistance), and 'aid-recipients' (i.e., disaster-affected individuals who received assistance). These two groups stand at directly opposite ends of the humanitarian

service line in a disaster. Hence, two different sets of research questions were designed to explore participants' views about the activities and arrangements that took place on the ground following a disaster. Their views are then triangulated throughout the analysis. For organisation key informants, most of the participants, I asked four major questions focusing on their:

a) career history and connections with disaster management;

b) experience in recent disaster response and recovery;

c) experience of working together with other organisations in a disaster response; and

d) reflections on and expectations of a successful disaster response.

For individual aid recipients, I asked three major questions, focusing on what:

a) they were doing when the floods were unfolding;

b) happened after the floods receded; and

c) were their reflections on experiencing the floods.

After the two pilot interviews and before interviewing participants, I prepared some prompting questions to advance the interview if any participants had difficulty verbalising their experiences. These questions were more explicit. For example, I asked aid givers "How long have you been with this organisation, and where were you before this?" Another prompt question for aid recipients was "What kind of assistance have you received?" In hindsight, the prompt questions were not necessary because, after several interviews, I learned tactics to probe deeper insights from the participants. Two interview questions were particularly useful to my data collection. First, "Looking back, what would you have done differently? Why?" The second was "To what extent are you satisfied with the level and quality of collaboration? Why or Why not?" On reflection, such preparation is necessary to provide the confidence I needed to begin data collection.

3.9.3. *Interview process and protocol*

During the interviews, the participants responded to initial questions focused on what happened after the disaster aftermath. The participants then expanded on questions regarding organisational and operational challenges, decision making, collaborative actions, recollection of experiences, and expectations for future improvement. Participants related their experiences to some disasters, mainly the devastating flooding of December 2014 and/or the more recent flooding in January 2017. The interview time ranged from 30 to 120 minutes with an average of about 60 minutes per participant. I rigorously wrote notes during the interviews.

The benefits of interviewing participants who have recently experienced floods have been discussed earlier, however, interviewing may be sensitive for some participants, particularly aid recipients. With this in mind, I adjusted my language when asking questions. Instead of asking "Were you afraid when water was rising?", I asked "What were you doing when the water was rising?". Often, I paused between questions to permit participants to express only the views they were most comfortable with without pressure.

I demonstrated interest throughout the interviews, actively listening, making notes, and I wrote analytical memos as soon as I possible after the interview to document serendipitous and interesting concepts that arose from the discussion. In qualitative research, research analysis and data collection make a simultaneous, on-going cycle throughout the study: new concepts derived from the analysis become the basis for subsequent data collection (Corbin & Strauss, 2008). After three to five interviews, I deliberately took a break to write reflective memos, review field notes and interview questions, and prepare for the next interviews. This reflection was useful in subsequent data analysis.

3.10. Principles of collecting and reporting case study evidence

I adopted the naturalistic generalisation approach to generate propositions or potential theories based on my experience in summarising data collected from multiple sources (Creswell, 2014; Stake, 2007). I also upheld my integrity principle and was a responsible researcher throughout the study. I was aware that ethics are an integral part of my approach to research from the way I ask and respond to questions, and the way reflections made on the data collection (D. Davies & Dodd, 2002).

For the benefit of the case study evidence, I looked at diverse evidence sources, built a case study database, maintained a chain of evidence and cautiously used data from electronic sources (Yin, 2014). Maintaining a chain of evidence enhances the information reliability embedded in a case study (Yin, 2014), so that an external observer or reader can trace the data analysis steps either from conclusions to research questions or vice-versa. The chain of evidence serves the purpose of an audit trail to prove how data are linked to findings (Carpenter & Suto, 2008; Chilisa, 2012; Tobin & Begley, 2004). Lastly, I use only statistical data from electronic sources to avoid being overwhelmed with excess data.

I was aware that triangulation is a powerful means to strengthen the credibility of findings (Liamputtong, 2013). Therefore, I converged data obtained from interviews and on-site

observations (methodological triangulation) as well as field notes and official documentation (data or source triangulation), "to corroborate the data and evolving themes" (Carpenter & Suto, 2008, p. 152). Yin (2014) asserts that using multiple sources of evidence is critical in case study research to benefit from the elaborations and outcomes of converging information from diverse sources. I observe that having applied these principles increases the likelihood of building novel theory with concepts embedded in case-based data (Eisenhardt & Graebner, 2007).

I adopted a constant comparative approach from the beginning of the data analysis and not at the end once all data were collected (Yin, 2014). For example, early interviews with NADMA and its collaborative partners informed my decision to include disaster aid recipients to cross-examine the causal mechanisms of collective aid delivery and reception. Additionally, by using analytical memos generated from the interviews, I identified salient codes and emerging themes that led to the subsequent theorisation.

3.11. Validity and reliability of research findings

With Yin's (2014) principles of collecting data in mind, and by applying Creswell's (2014) notions on reflexivity and Stake's (2007) naturalistic approach to data analysis, I logically linked the data to propositions, critical to developing internal and external validity. Validity refers to the 'correctness' of the findings and examines if an appropriate method has been applied to investigate what is intended to be investigated (Bryman, 2012; Holloway & Galvin, 2017; Liamputtong, 2013). Reliability refers to the stability, consistency and trustworthiness of research findings with an emphasis on a finding being reproducible by other researchers at other times (Carpenter & Suto, 2008; Kvale, 2007; Liamputtong, 2013).

Quantitative researchers, especially those who practise the positivism paradigm, evaluate the trustworthiness of findings based on validity and reliability. Qualitative researchers who adopt the postmodern theoretical paradigm believe in many realities and truths, like this researcher, to evaluate the trustworthiness of findings based on validity and reliability. However, qualitative researchers incline to use the term 'rigour' to refer to validity and reliability because rigour indicates varying methodology applied in research that focuses on meaning and interpretation to which quantitative research pays little attention (Liamputtong, 2013). Specifically, rigour refers to the quality, trustworthiness, and legitimate process compliance of qualitative enquiries (Liamputtong, 2013; Murphy & Yielder, 2009; Tobin & Begley, 2004). Without rigour, qualitative research may risk to becoming fictional journalism or may fail to contribute to knowledge creation (Tobin & Begley, 2004).

Qualitative research holds that reality is socially constructed by multiple participants and a socially constructed reality can be interpreted but cannot be measured (Liamputtong, 2013). Nevertheless, the merits of qualitative research can be examined from four aspects: internal validity to credibility; external validity to transferability; reliability to dependability; and objectivity to confirmability (Guba & Lincoln, 1989; Lincoln & Guba, 1985). Credibility is compatible with authenticity, and is useful to confirm whether the research is genuine, authoritative or simply questions if the research can be trusted (Bryman, 2012; Carpenter & Suto, 2008; Creswell & Plano Clark, 2011). This study addressed the credibility concern by triangulating various reference points from diverse sources to allow a more convincing and accurate conclusion (Yin, 2014) and through constant reflexivity (Chilisa, 2012).

Transferability is compatible to external validity and is similar to generalisation of inquiry (Chilisa, 2012; Tobin & Begley, 2004). Transferability emphasises applicability and questions to what extent a study's findings can be applied to other individuals, groups or settings (Carpenter & Suto, 2008). I addressed the transferability concern by illustrating a chain of evidence as reported in the following chapters when discussing how data are sorted, organised and analysed. Hence, by paying attention to transferability criteria, I also addressed analytical generalisability of research findings (Liamputtong, 2013; Tobin & Begley, 2004).

Dependability asks whether the research findings "'fit' the data from which they have been derived" (Carpenter & Suto, 2008, p. 150). I addressed this concern by illustrating the methods used to conduct this study, triangulation of participants of both strategic and operational backgrounds and seemingly opposing collaboration and disaster management theories (Chilisa, 2012). Confirmability is associated with objectivity or neutrality in qualitative research (Chilisa, 2012). The major objective of confirmability is to ensure the research findings are free from personal biases, motivations, or interests (Lincoln & Guba, 1985), and clearly link to the data (Chilisa, 2012; Padgett, 2008; Tobin & Begley, 2004). I addressed the concern of confirmability and other criteria through constant reflexivity as a responsible researcher.

In retrospect, I exposed different perspectives of reality (Patton, 1999). I also triangulated data from multiple sources and applied more than one triangulation method, which is conducive to attain higher internal validity (Liamputtong, 2013). Combined with converged ontological and epistemological assumptions and the positionality of the researcher, I have validated the research findings with evidence guided by the four evaluative criteria to demonstrate the rigour of this study's findings.

3.12. Reflections on the research

Conducting this inductive qualitative research to investigate the barriers to cross-sector collaboration in disasters generated several reflections. Throughout the analysis, I constantly documented self-reflections on how disaster management organisations operate in a complicated, uncertain and rapidly changing environment. From the beginning of the research design to data collection, I constantly reminded myself to mitigate if not entirely eliminate presupposed ideas and practical disaster management experience so that this empirical study could be conducted in the most possible objective basis. Having such an awareness throughout all phases of the qualitative study, I was able to address the potential trap of positing personal experience as a sort of theoretical framework. I trust that the discussion of personal reflections in qualitative research is instrumental in heuristic learning, a conscious effort to remain objective, and "reflections is one method of knowledge creation" (Thompson, 2012, p. 197). From the outset, self-reflexivity (Tracy, 2010) was an integral part of this study built into the data collection and analysis.

Before data collection, I acknowledged my research had certain *risks*. The reason for such *risk* is because of concern that some participants may experience emotional distress during data collection given the natural disaster context of the research. I am aware of my obligations to adhere to the ethical guidelines prescribed by the university's Human Ethics Committee and to "protect the participants from any forms of possible risk" (LeCompte & Schensul, 2010, p. 183). I am also mindful of treating participants with respect throughout the research journey, with sensible of asking of questions not causing unintended psychological distress.

However, many times some elderly participants started to look sorrowful and dismal when recalling the traumatising flood that had devastated their houses and communities two years before. I was in a dilemma in demonstrating an interest because rich data were unfolding but I was also concerned not to cause unnecessary distress. When such a situation arose, I paused, and often discontinued asking participants to elaborate or I ended the interview. In hindsight, if participants relayed in-depth stories should I have followed up assiduously with them on how they survived water as high as the coconut trees? The idea of exploring stories under such conditions was preposterous and undoubtedly iniquitous.

3.13. Conclusion

This chapter presented the research design, the selection of participants and research methods used in the study. It began with a discussion of the rationale for employing inductive qualitative and critical-realist approaches to examine the dynamics of cross-sector collaboration in disasters. In selecting this approach, I use a case study design as the most suitable strategy to investigate a unique phenomenon. I have reflexively given due consideration to ontological and epistemological beliefs on how the chosen research methods on collecting data generate research findings.

I then discussed the participants, who are the key informants for this study, and participant selection and engagement strategies. The challenges in balancing theoretical sampling and theoretical saturation were also discussed. Finally, I presented the data collection techniques: how to design an interview protocol and interview questions, and how to apply qualitative research tools to collect data for a case study. The evaluative criteria of validity and reliability of qualitative research inquiries were illustrated to provide evidence about how this study addressed various challenges to generate novel theory. The next chapter discusses the data analysis and how interview quotes were organised and categorised into open codes and focused codes.

Chapter 4:
Data analysis 1:
Analysing open and
focused codes

4.1. Introduction

This chapter is the first of two chapters on data analysis. It begins by discussing the analytical techniques used, the processes to organise and categorise participants' quotes and identifies codes from the interviews. The initial (or open) coding of the interview data led to numerous open codes. This was followed by two levels of focused coding. The following chapter discusses how selected focused codes led to the discovery of the themes derived from the analyses.

4.2. Data analysis techniques

My ontological, epistemological and axiology stances guided me in designing this study. I sought a deliberate approach to explore the perspectives of participants in a complicated social, physical and situational real world (Liamputtong, 2013; Mills, Durepos, & Wiebe, 2010). Leech and Onwuegbuzie (2008) report that there are 18 qualitative data analysis techniques, *inter alia*, classical content analysis, constant comparative analysis, keywords-in-context, discourse analysis, narrative analysis, conversation analysis and text mining. However, I made an informed choice to select the most suitable data analysis tools to conduct this interpretive study by using grounded theory tools, which are commonly referred to as qualitative research tools, including coding, memoing, constant comparisons and theoretical saturation (Charmaz, 2008). In part, these tools are useful and practical for my study to generate theory from the data in participants' original environment (Charmaz, 2014; Glaser & Strauss, 2017). As Charmaz (2014) argues, the quality and credibility of empirical study begins with the data; and gathering data through interviews is considered one of the most effective ways to explore emerging phenomena (Charmaz, 2014; Eisenhardt & Graebner, 2007) such as the barriers to collaboration in disasters that this study investigates. Gathering data through interviews is also what I intended to do from the beginning, to elicit the participants' stories. After the development of research questions, the subsequent processes of theoretical sampling and saturation, and attention to constant comparative method, became clearer so that I used grounded theory tools to construct theory embedded in data collected from the interviews (Charmaz, 2014; Tweed & Charmaz, 2011).

Data analysis begins with data collection in an on-going cycle that is instrumental to construct theory grounded in data. Qualitative research tools are culturally sensitive and suitable for theoretical explanations with an emphasis on the development of events (Corbin & Strauss, 2008) and are particularly useful for research with characteristics of "uncharted, contingent or dynamic phenomena" (Charmaz, 2008, p. 155). Using qualitative research tools also enables the addition of new data even if it comes later in the analysis (Charmaz, 2011, 2014). In my case, after over six months since the first interview was conducted and data were transcribed and analysed, I was still able to add new data when a keen participant became available. These attributes of grounded theory tools are critical for this study that involves participants from different cultural backgrounds.

The data collected through semi-structured interviews were organised, sorted and synthesised through qualitative coding and reflective memo writing. I transcribed all digitally voice-recorded interview data verbatim. If the interview was not conducted in English (e.g., Malay or Mandarin), I translated it. The transcriptions and field memos were stored and sorted in NVivo with pseudonyms assigned to each participant. I backed up all files of the raw interview data, the transcriptions, field memos and the NVivo file in a portable disk protected with an encrypted password and locked in my office at the university.

Analysis commenced immediately after the initial interviews. I constantly compared current data with data on hand. The data comparison between interview transcripts, field memos and secondary data (e.g., news and government documents) was conducted and analysed concurrently with subsequent data collection. By immediately systematically analysing data collected and writing reflective field memos after each interview, I found cues within the data crucial for subsequent interviews (Eisenhardt, 1989). Appendix 4A shows two excerpts from my reflective field memos written in different days and how the earlier field memo helped to prepare for the next interview by asking more direct and critical questions.

I used two major methods of coding: initial coding (or open coding) and focused coding (Charmaz, 2008). Initial coding began with reviewing transcripts line-by-line, coding "as a 'lumper', not a 'splitter'" (Saldaña, 2016, p. 79) where I coded larger chunks of work instead of specific lines of interview transcription. Throughout the coding, I was aware that only the essential parts were to be coded. Data analysis includes categorising codes, comparing data and looking for possibilities of specific patterns, and identifying properties and dimensions (Charmaz, 2008, 2011; Saldaña, 2016). As coding progressed, patterns emerged (Glaser &

Holton, 2007). For example, varying organisational plans to prepare for effective disaster response depicted in the codes ranged from strengthened legitimisation to capacity building, membership inclusiveness, relationship management, leadership preferences and others. These codes led to the discovery of an emerging theme (in focused code form) and informed larger stories beyond the meaning of individual themes and dimensions (Charmaz, 2014). The focused codes showed a theme that organisations had taken varied preparatory actions they perceived essential for effective disaster response without having a common understanding of approaches and objectives to attain a swift, effective and coherent disaster response.

By organising and realigning codes, the participants' meanings and views were distinguished to explain their actions (Charmaz, 2008). These codes are like the bones of the analysis and, when all relevant codes are integrated, the analysis skeleton is formed (Charmaz, 2014). Examples of open coding showed that codes such as *resentment, gratefulness, criticism* and *optimism* were diagnosed throughout the interviews, which led to the identification of a focused code: *expressing emotions by disaster actors*. This focused code explicitly presented the varied emotions experienced by diverse actors in emergencies. It is common for qualitative researchers to use active codes and gerunds (a verb that functions as a noun ending in *ing*) such as *leading* and *coordinating* (Charmaz, 2014). In my case, the word *expressing, inter alia*, is used. Coding is non-linear; it oscillated between data and analysis iteratively (Charmaz, 2008). Throughout the analysis, several tables were used to illustrate categories, properties and dimensions identified in the analysis. They formed the basis of the final theory.

Focused coding followed initial coding to sift, sort and synthesise large data sets to identify the nature of relationships between and within categories (Charmaz, 2008). During the focused coding, line-by-line codes were lifted to compare data and codes. Subsequently, two iterations of focused coding were conducted to produce first-level and second-level focused codes. For example, '*expressing emotions by disaster actors*', '*searching preferred leadership style in disaster response*', and '*preparing for disaster through varied actions*' were identified first-level focused codes that led to a salient second-level focused code with a higher level of message '*attitude to disaster leadership*'.

Throughout the analysis, I compared data and codes and defined links between them and categories were generated. Subsequently, I compared "data and data, data and codes, codes of data and other codes, codes and category, and category and concept" (Charmaz, 2014, p. 163). The constant comparisons of common themes and patterns in several codes led to conjecture

and generalisation (Charmaz, 2011, 2014). Finally, the primary data from the in-depth interviews and the secondary data, were triangulated (Liamputtong, 2013; Liamputtong & Ezzy, 2005; Stake, 2007).

4.2.1. *Organising the data*

The verbatim transcriptions comprised 93,645 words. Individual interview transcripts were stored, organised and catalogued with computer-assisted qualitative data analysis software (CAQDAS) such as NVivo version 11. Documentation and organisational reports were stored and sorted manually as printed copies. I maintained all the participants' signed consent forms for the interviews, field notes, audio records, and interview transcripts in locked cabinets in the university and all electronic data are protected with encrypted passwords.

Under the code category, three node levels were created: parents, children and grand-children. For example, the description by operational participants of stockpiles of necessary equipment (the grand-children node) implied government groundwork (children node) that led to the parent node describing how government actors so far contended with the preparatory actions in disaster management. I further categorised the interview data into two groups when I organised and sorted the data with NViVo. I not only visualised any collaborative arrangements identified but also highlighted the continuum of the disaster response operation as it unfolded. For the organisations that provided aid such as NADMA, other assisting government agencies, NGOs, UN agencies and ASEAN organisations, I grouped the interview questions as follows:

a) Career history and connection with disaster management

b) Experience in disaster preparedness, response, and recovery

c) Experience of inter-organisational collaboration in disaster management

d) Insights and reflections of collaboration in disaster management

For the disaster aid recipients, I asked interview questions that differ from the others as follows:

a) What were you doing before and during the disaster?

b) What happened after the flood receded?

c) What was your experience of the aid you received?

The responses from asking the two groups of questions were constantly compared for juxtaposition purposes and to contribute to the subsequent coding analysis.

4.2.2. *Reflective field memorandum*

I drafted reflective, analytical memos immediately after each interview. I wrote the memo quickly while memories were still fresh. These field memos were written in various places. This memo writing provided a space for me to reflect on what had been communicated, observed and explored between me and interviewee. Writing memos and field analytical memos is a useful act to prepare a researcher for the next interview. Through the memo writing, I benefitted from being able to correct otherwise unnoticed errors in the previous interview. Through learning from previous interviews, I became proactive and asked important questions earlier, listened without interrupting, and attentively observed the body language of interviewee.

4.2.3. *First cycle coding*

As mentioned above, I conducted two data coding phases, an initial coding followed by focused coding (Charmaz, 2008) that will be discussed in the next section. The first cycle coding began with initial or open coding. I looked for the stories, flows, hidden messages and anomalies from the interview transcripts that Charmaz (2008) terms "close reading and interrogation of data" (p.163). The initial coding was interactive and comparative. Throughout this coding, I actively identified frequently used words, essential sentences or paragraphs of interview transcripts with similar patterns that I categorised as open codes. To benefit the search for emergent leads during the initial coding, I applied *In vivo* coding, which consists of participants' original statements and *process* coding that uses gerunds to show action in the data (Charmaz, 2006, 2008). Table 4.1 shows some examples of *in vivo* and *process* coding.

Table 4-1: *Examples of in vivo and process coding*

General Qualitative Coding		
Examples of In Vivo Coding	**Participant's Quotes**	**Open Code**
We are sad	*Not sure what should we do. We are not good to get prepared. We are sad… My feeling…is sad. We are also human. How can we left out. Regardless how we voice out, still receive nothing* (Aid recipient).	
My driver was crying	*Later I discover lots of food arrived at Air Keruh but cannot cross river…*[because] *no transport. …On 27 December* [2014], *Kota Bahru was shut down. My driver was crying...he said, madam, I cannot be help much, my family, friends* [also] *have not eaten for days* (UN agency).	Sadness
Examples of Process Coding	**Initial Narrative Data in Interview Transcript**	**Open Code**
Exerting the right of state government	*…on current procedures, federal government is in-charge of disaster management but state government want to control it. So we have to seem 'dancing'* (in managing the relationships) (assisting government agencies).	
Being selective in relief items	*They* [Japan, USA] *will not receive* [simply] *any assistance from any countries …. Japan received assistance from Indonesia but only for blanket. Before we sent the blankets, Japan Embassy officials came to* [our office] *to select, to test...ready to-eat food, they test each of the item that suit Japanese. They are very selective* (ASEAN organisation).	Defending autonomy

For the *in vivo* coding, the keyword *sad* was identified from the raw interview data. Hence the selected word for the open code was s*adness* for *we are sad* and *my driver was crying*. Throughout the initial coding, the coding principle of linking codes to codes leading to emerging links between the coding was applied. The coding resulted in many open codes; however, not all are relevant or useful. One notion to highlight is that *in vivo* codes about emotion can be referred to as emotional codes. During interviews, participants expressed myriads of emotions and such emotional codes are important parts of the interview data analysis. Saldaña (2016) provides a succinct explanation why a qualitative researcher needs to pay attention to emotional codes while analysing data because these codes are "suitable to explore interpersonal participant experiences and actions, especially in matters related to relationships, reasoning, decision making, judgement and risk-taking; provide deep insights into participant's perspectives, worldviews" (p.125).

Two examples of process coding are "e*xerting the right of state government*" and *"being selective in relief items"*. These two codes demonstrate a commonality where participants tried to protect their basic rights even in an emergency. After integrating these two codes, "defending autonomy" was adopted as the representative open code. Table 4.2 provides an overview of the categorisation of open codes, and first-level and second-level focused codes. A detailed

account of arriving at the first- and second-level focused codes from the open codes will be discussed in the next section with examples to illustrate the process in a structured manner.

Table 4-2: Categorisation of the open codes, first- and second-level focused codes

Open Code	First-Level Focused Code	Second-Level Focused Code
• Sadness (e.g., *We are sad*[3]) • Gratefulness • Empathetic awareness • Optimism • Criticism • Resentment	Expressing emotions by disaster actors	Attitude to disaster leadership
• Defending autonomy (e.g., *We are sitting in the driver's seat.*) • Engaging partners proactively • Emphasis on apolitical approach • Hands-on and pragmatic • Command and control model	Searching for a preferred leadership style in disaster response	
• Perceived satisfactory preparatory work (e.g., *In my opinion, we have the best inter-agency operation in Malaysia.*) • Clarifying the importance of disaster management • Leveraging on influential people • Performing standard governmental groundwork • Adhering to institutional priorities • Holistic approach by NGOs • Promoting general public's awareness • Benchmarking on regional cooperation	Preparing for disaster through varied actions	
• Positive and enabling factors in disaster response (e.g., *When a good leader visits, …, the victims felt that they were not forgotten, they will respond positively to the request of the government officials.*) • Negative and constraining factors in disaster response • Tension between central agencies and state governments • Politicised humanitarian aid	Experiencing political influence in the process of responding to disaster	Tensions between central and state stakeholders
• Asserting formal and coordinated approach (e.g., *We do receive them but not coordinated well. … then you will cause frustration. We do not want that happened.*) • Suggesting informal and innovative approach • Monitoring situational awareness after disaster strikes	Seeking optimum solutions in emergencies	

---

[3] An example of a participant quote to illustrating the open code identified.

• Considering cultural norms and customs in disaster relief (e.g., *They know the norms of the village...for us from outside of Kelantan, it's hard for us.*) • Approach of international organisations in relief operation • Approach of local organisations in relief operation • Differing perspectives in interpreting successful disaster relief	Observing cultural differences and sensitivities in disaster relief operation	
• Adhering to organisational principles (e.g., *We have to make sure all agencies react according to National Security Council Directive no. 20.*) • Completing relief mission as driven by passion (i.e., professional turn humanitarian and disaster expert) • Completing relief mission as driven by official duty • Attitudes towards disaster response operation • Altruistic approach through volunteering work in disaster response operation	Accomplishing mission despite challenges	Levels of trust toward among actors
• Sceptical towards NADMA's capabilities (e.g., *How effective is NADMA? Because they are not tested yet.*) • Approving of NADMA's capabilities • Disapproving of NADMA's capabilities • Reviewing status of on-going organisational restructuring • Varying understanding of good collaboration in disaster management	Varying attitudes toward NADMA's capabilities	
• Welcoming (*e.g., That's a good start, because you have ASEAN regional warehouse there. That's quick win.*). • Reserved attitude • Fulfilling national mandate • Empowering new agency with legitimate duties (i.e., providing central directives, serving as national focal point of disaster management) • Differing interpretation of empowerment among officials • Understanding of planned resilience[4] (i.e., proactive attitude, operational- or strategic-driven capacity)	Setting-up new nodal national agency	Unclear organisational roles and legitimacy

---

[4] Planned or inherent resilience refers to an organisation's capacity to function as planned in the absence of adverse events (i.e., before a disaster), critical to "reduce probability of failure and reduces negative consequences of failure, …" (S. Cutter et al., 2008; Hall, Malinen, Vosslamber, & Wordsworth, 2016, p. 44) with an emphasis on "both 'hard' systems (e.g., infrastructure) and 'soft' (e.g., communities) systems" (Kahan, Allen, & George, 2009, p. 1).

• Understanding of adaptive resilience[5] (i.e., leadership, collaboration, employee well-being and organisational capabilities to learn)		
• Dedicated humanitarian specialist (e.g., *I am an architect and urban designer, I joined relief operations since the 2004 Indian Ocean tsunami in Aceh. I have 13 years of experience.*) • Career government official • Humanitarian professionals with international and regional experience • Distinguishing government and non-governmental actors • Understanding disaster aid recipients	Understanding actors' background in disaster management	
• Addressing organisational ego (e.g., *It happened, and happened again in this recent flood response. Despite with the Standing Order, each agency has its ego.*) • Examining organisational accountability • Reviewing the nature of multi-tasking in disaster response operation • Extent of service from disaster response to recovery	Reviewing organisational roles and attitudes in disaster management	
• Coordinating stakeholders (e.g., *My role is to coordinate my men, my agencies.*) • Communicating challenges between actors • Compliance with standard operating procedures • Dealing with chaotic and unexpected situations involved victims • Managing expectations of varied disaster actors	Interacting with multiple stakeholders during operation	Attitude to manage stakeholder relationships
• Building 'goodwill' relationships with peer agencies (e.g., *You have to do personal relations, doing it through goodwill training* [practice]) • Building trust and credibility between actors • Conducting training and simulation exercises to building and renewing relationships • Observing regional and international best practice in cooperation	Being aware of intra- and inter-organisational relationship building	

---

[5] Adaptive resilience refers to resourcefulness and flexibility in responding to uncertainties during adverse events (e.g., post-disaster) (S. Cutter et al., 2008), a process of "learning by doing…by increasing system knowledge through a structured feedback process" (Allen, Fontaine, Pope, & Garmestani, 2011, p. 1340). Here, Nilakant and colleagues' (2014) interpretation of four factors about adaptive resilience are: Leadership, collaboration, employee well-being and organizational capability to learn.

• Interaction between major local NGOs during disaster response (e.g., …*We never thought about trying to mobilise or collaborate with other NGOs. I never thought of collaboration with any parties.*) • Interaction between public managers and disaster aid recipients • Interaction between government actors • International NGOs' approach in reaching out to government decision makers • Post-disaster interactions among multiple stakeholders • Understanding and exploring regional cooperation and mechanism	Relationships across different stakeholders
• Demonstrating different values of accountability *(e.g., The military does not want to be coordinated by civilian.)* • Collaborating with familiar organisations and personnel (homophily) • Developing collaboration by enthusiastic convener • Endorsing existing mechanism	Exploring preferences for collaboration among organisations
• Coping with public expectations *(e.g., Victims are not grateful...they always hope for the better treatment but themselves cannot cooperate with us in terms of cleanliness, working together.)* • Varying training and development programme to prepare for disasters • Coping with familiarising new structure and systems • Coordinating emerging partners • Individual officials are coping with new job scope • Coping with leaders' expectations	Acknowledging multiple challenges in preparing for disasters

Orientation on building organisational capacity

• Collaborating with convenient and existing partners including other assisting government agencies (*e.g., When there is a disaster response, we need coordination of various response agencies. The Bomba, Civil Defence, military, Police, RELA, state committee, district committee.*) • Exploring possibilities of collaboration involved local and foreign actors • Exploring collaboration with major local NGOs • Collaborating with trusted external partners • Reviewing collaboration involved emerging partners including international NGOs and the private sector	Identifying collaboration partners

- Learning from best practice (e.g., *... We use global standard but localised those standardise in country. So, this is what we bring in. When we are strengthening our mechanism and coordination, how we engage with the community, we are using international standard.*)
- Sharing of regional experience in disaster management
- Benefitting from useful individual advice
- Maximising individual learning experience
- Exploring organisational and individual learning
- Enhancing mutual learning experience
- Strengthening organisational learning experience

Learning experience

Learning from experience and lessons learned

- Public managers' self-portrayed improvement in operation (e.g., *The disaster management in Malaysia is improving in every aspects. We are improved in terms of mechanism, ...procedures, manpower, skills, knowledge, logistic.*)
- Reality of disaster relief
- Reviewing strategical challenges
- Organisation-wide lessons learned
- Operational lessons learned
- Other partners' views on lessons learned by public organisations
- Integrating advices and best practices into future plans and actions

Being aware of lessons learned from previous experience

4.2.4. *Second cycle coding*

Second cycle coding followed the first cycle coding. The second cycle led to the discovery of focused codes where open codes were reorganised into specific categories, prioritised to form anchor categories, and synthesised to develop a central category (Saldaña, 2016). Using Charmaz's (2008) coding techniques, 100 open codes were chosen from the initial analysis. The selected open codes were coded a second time since Saldaña (2016) contends it is necessary "…to develop a sense of categorical, thematic, conceptual, and/or theoretical organization from your array of first cycle codes" (p. 234). As a result, 19 first-level focused codes and 7 second level focused codes were identified as delineated in Table 4.2.

For illustrative purposes, the following describes the process to identify first-level focused codes from the selected open codes. For instance, the first-level focused code "*preparing for disaster through varied actions*" highlights the varying perceptions, plans and practices of

disaster stakeholders during different phases of disaster management. It was an integrated result of the following eight open codes supported by various participants' quotes.

- Perceived satisfactory preparatory work. For example: "*In my opinion, we have the best inter-agency operation in Malaysia[6]*" (Yusri Salahhudin[7], a participant with a strategic and operational background from an assisting government agency).

- Clarifying the importance of disaster management. For *example: "NADMA aims to bridge some of the gaps in other provisions that relates to disaster management that is deposited with the various responding agencies. These are the things that we know, eh...this is required because there are areas...as we talk about mainstreaming the disaster risk reduction, there can be area where one jurisdiction of a particular agency ...cannot cross the bridge over"* (Abdul Rahman, a strategic and operational participant from NADMA).

- Leveraging on influential people. For example: "*…ex Community Service [division] Chairman, is the Sultanah of a southern state. …She comes as an advisor. … She has mobilised the Mall...we have a strong lady to support the work*" (Sivaragam Jaya, a strategic participant from a major local NGO).

- Performing standard government groundwork. For example: "*...disasters are unpredicted, no doubt we have the agencies to do predictions, sometimes, it just happens. If we are ready, we can do some prevention measures, it is better than being responsive*" (Che Singh, a strategic participant from an assisting government agency).

- Adhering to institutional priorities. For example: "*So we need a legal framework as our source of authority. We are heading....in the process of formulating the law on disaster risk reduction*" (Abdul Rahman, a strategic and operational participant from NADMA).

- Holistic approach by NGOs. For example: "*emergency phase is 'honeymoon' period, everyone wants to be there. When they leave, everybody will leave at once. And left everything behind. Nobody cares what happen after that. So, when we*

---

[6] Participant quotes are used for illustrative purposes throughout Chapters 4 and 5. Quotes are italicised and documented verbatim. Any addition to the quotes is distinguished with brackets; some omissions are made to remove unnecessary words or identifying information.
[7] All names are pseudonyms. However, descriptions to illustrate the organisations with which participants were associated or the general background of interviewed participants as individuals are real.

stay in Kelantan after 2014, we stay till now” (Senin Awang, an operational participant from a major local NGO).

- Promoting general public's awareness. For example: *“...Awareness of public... we asked them to evacuate but they denied. Now improved…when flood happen in December 2016, it is very easy for us to evacuate them. Before flood* [occurs], *they have evacuated themselves first”* (Fakhrul Mansor, a strategic and operational participant from an assisting government agency).

- Benchmarking on regional cooperation. For example: *”we are basically looking at the ASEAN level, we are at par and keep abreast, we adjust, able to come in responding in the region as one”* (Abdul Rahman, a strategic and operational participant from NADMA).

In addition to "preparing for disaster through varied actions", another two first-level focused codes detected were "expressing emotions by disaster actors", and "searching preferred leadership style in disaster response". These three first-level focused codes led to the discovery of a second-level focused code named "attitude to disaster leadership". Seven second-level focused codes were detected from the data set. These focused codes were merged into three themes within the broader codes; a detailed discussion is in Chapter 5.

Table 4.3 summarises the discussion in the preceding sections on identifying the seven second-level focused codes from the 19 first-level focused codes derived from participants' quotes as documented in the interview transcripts.

Table 4-3: *Categorisation of the second-level focused codes*

No	Second-Level Focused Code	Focused Code
1	Attitude to disaster leadership	How an organisation positions itself in a specific environment and how other collaborating partners evaluate the organisation based on varied lens in terms of leadership, mandate and planning or preparatory actions.
2	Tensions between central and state stakeholders	
3	Level of trust among actors	How the actions or inactions, level of engagement between and performance of disaster actors as well as attitudes towards organisational ability were interpreted by other stakeholders through the collaborative process.
4	Unclear organisational roles and legitimacy	
5	Attitude to managing stakeholder relationships	How organisational perspectives on relationship management, learning and building capacity influence the processes, structures and mechanisms to collaborate in emergencies.
6	Orientation on building organisational capacity	
7	Learning from experience and lessons learnt	

4.3. The process to identify salient focused codes

This section discusses and provides the evidence for how the second-level focused codes were identified from the 19 first-level focused codes as in Table 4.3. Seven second-level focused codes were identified. To illustrate the process, the first four second-level focused codes identified are used as examples. The processes to identify these four second-level focused codes is discussed in detailed, illustrated and supported by participants' quotes.

4.3.1. *Attitude to disaster leadership*

The second-level focused code "attitude to disaster leadership" was derived from the first level focused codes "expressing emotions by disaster actors", "searching for a preferred leadership style in disaster response", and "preparing for disaster through varied actions". Analysis of "expressing emotions by disaster actors" showed that disaster actors demonstrated varied sentiments towards leadership and leaders' decisions, including resentment, gratefulness, empathy, optimism, criticism and denouncement. For instance, Harumi Mohammad, a disaster survivor and aid recipient, lamented that she and other villagers were left unattended and unaided by government officials in the evacuation centre: *"we were left alone"*. Safiya Mahmod from NADMA criticised another peer agency for being incapable of performing a designated duty:

> *…they cannot make right order, decisions, for example, there is a centre managed by an assistant officer, he cannot react how to manage the evacuation centre; the problems arise, for instance, the stock is depleting and he doesn't know what to do,*

seems afraid to contact higher decision-makers because he think his position is too low.

In the discussion about "searching for a preferred leadership style in disaster response" among various stakeholders, participants with a strategic background from NADMA, ASEAN organisations and the UN, preferred command and control leadership. For instance, Sofyan Febrita from an ASEAN organisation, highlighted that if a leader is not strong and authoritative, no one will take his or her word seriously. Nonetheless, participants with an operational background from NADMA, other assisting government agencies, NGOs and aid recipients, preferred consultative and engaging leadership. For instance, Safiya Mahmod, an operational employee from NADMA observed the importance of engaging leadership with the following evidence:

…there was a local assemblyman that took charge to help, he formed the team and assigned people of work. There was a present of good leadership that make it difference…bring his followers together. … good leader visit, stay together, try to understand their feeling, the victims felt that they were not forgotten, they will response positively to the request of the government officials.… These kind of leaderships are not seen elsewhere.

For "preparing for disaster through varied actions", participants from regional and international organisations had higher expectations of disaster preparedness and mitigation than NADMA and other assisting government agencies. Often, public managers with both strategic and operational backgrounds claimed they had made necessary pre-arrangements to prepare for future disasters but their partners and disaster aid recipients did not share their view. Sofyan Febrita from an ASEAN organisation and Stefano Jean-Pierre from an international NGO argued that preparing for a disaster is like buying insurance (an example of a mitigation activity) for property against fire. These views resonated with NADMA's operational officer, Fahruddin Iskandar, with first-hand operational experience in an uncoordinated large-scale flood relief operation in 2014, claimed that advanced preparedness and a back-up plan are critical for an effective disaster relief operation. Iskandar's reflective notion is:

w*hat happened in Kelantan* [flooding] *is actually we do not have* [back up] *plan. … the response agencies in the district and the state are not well prepared. They don't have Plan B or Plan C.*

Although varying foresights, positions and experience among participants may lead to different preparatory actions, there are common areas agreed by both strategic and operational participants, such as disaster relief simulation exercises, continued training and public awareness programmes. Daniel Rasyid from an ASEAN organisation, believes necessary preparatory action against disaster were, first, to gain full support from the most senior central

leaders; second, to secure adequate funding; and third, to be able to coordinate with multiple agencies including the military. Rasyid's advice to NADMA is:

> *My suggestion to NADMA is...agency should get full support from the Prime Minister. Once they have the full support from the Prime Minister, they can do their job because in disaster management, it is very tough. The agency chief should coordinate everything...sometimes, military does not want to be coordinated by a civilian.*

When asked what were the pressing issues in preparing an organisation for future disasters, NADMA's strategic decision-maker, Zain Ahmad, contended that NADMA needs to demonstrate strong leadership because it is necessary in engaging and managing multiple organisations and individuals with varied values and perspectives. Ahmad's co-worker, Abdul Rahman, echoed his view on the importance of public managers possessing strong leadership to ensure all actors are compliant to the procedures. Their views are:

> *managing people consists of various organisational culture, different jurisdiction, so...the leadership needed is not only to get respect, confidence...we need to gain confidence not only* [from] *agencies but the confidence of the Prime Minister* (Zain Ahmad, NADMA).

> *… called upon to make critical decisions, if they are not well versed with the standard operating procedures, then you will see some disorganisation because the leaders must be strong enough* (Abdul Rahman, NADMA).

In summary, this section illustrates how the first level focused codes of "expressing emotions by disaster actors", "searching preferred leadership style in disaster response", and "preparing for disaster through varied actions" led to the discovery of the "attitude to disaster leadership', the first second-level focused code.

4.3.2. *Tensions between central and state stakeholders*

The second-level focused code of "tensions between central and state stakeholders" was derived from the first-level focused codes of "experiencing political influence in the process of responding to disasters" and "seeking optimum solutions in emergencies". Participants based at the central level believed that they were in total control (with a national mandate, necessary resources and information, and by giving central directives). However, state governments did not share this view and aimed to minimise interference by central agencies. The contrasting views are widened when a state has a governing party different from central government. For example, Nik Sidek, a school teacher and an aid recipient, was under tremendous pressure from his principal not to accept a cash donation from an opposition party leader. In another example, Syed Anwar, an operational staff member based in a state, argued for the importance of

understanding the nuance of balancing control and coordination between central and state actors. Anwar illustrated as follows:

> *…when you work with state government, public relations is quite important because as a federal government official, and you are trying to...on behalf of the federal government, sometimes, state government wanted to be in control in certain things. But on current procedures, federal government is in-charge of disaster management but state government want to control it. So we have to seem 'dancing'* [in managing the relationships].

Often, official relief operations were manipulated and politicised at varying levels. For instance, Fahruddin Iskandar, an operational staff member from NADMA, shared his experience of how he applied an innovative approach to convince a military general to release quarantined relief items from military possession:

> *There was one time, we used to have coordination meeting at night, we started at 10 pm. I collected all information that I can get, try to negotiate with the General, I said that Sir, this* [relief item] *is from one NGO, and they have in contact with me mentioned that you are keeping their possession, I will try to sell some of the politicians' names, i.e. Tok Penting...He is Kelantanese. Deputy Prime Minister asked Tok Penting to take charge of the disaster operations. I said that Tok Penting already know about this thing, so I hope you can give the things back to the owner.*

In practice, the tension between central and state governments always exists as Safiya Mahmod from NADMA's operational team highlighted:

> *…we need to develop good relationship between federal and state governments because district offices will listen to the state government. If we did not have...any* [or] *build good relationship with state government, it will be some problems for us to give order to the district office….*

4.3.3. *Levels of trust among actors*

As illustrated in Table 4.2, the juxtaposition of "observing cultural differences and sensitivities in disaster relief operation", "accomplishing mission despite challenges", and "varying attitudes toward NADMA's capabilities" led to the discovery of the second-level focused code "level of trust among actors". Starting with "observing cultural differences and sensitivities in disaster relief operation", aid recipients generally expressed distrust towards uniformed personnel. For instance, the aid recipient, Noh Agus, argued that: "*…a Police Officer came to remind us for evacuation but I do not trust him*". Conversely, NADMA's operational officers judged aid recipients as ungrateful and "stubborn". Abdul Rahman, a strategic participant from NADMA, contended that population living in the East Coast states understood they were prone to flooding during monsoon seasons but regretted they poorly prepared themselves for disasters. Instead they heavily relied on government assistance. Rahman explained:

> *That is a very difficult part because...culturally the people in the East Coast states, are ...North-East Monsoon flood is water festival kind of thing. That's the mentality* (Abdul Rahman, NADMA).

Under the first-level focused code: "accomplishing mission despite challenges", participants from major local NGOs demonstrated practice or standard rarely seen among other participants. The way these NGOs' volunteers were mobilised vividly demonstrated their trust in the values of the organisations with which they were associated. For instance, volunteers of a particular NGO applied for leave from their companies and paid for their own air tickets to render relief support in a faraway state. Some revisited aid recipients regularly after the official relief operation was concluded. According to Lim Chiang Hock from a local NGO, he was moved by the contributions of these volunteers and observed:

> *...the HQ chartered a flight, FireFly with 72 seats fully booked by .... volunteers. Left home at 6 am, return home with same flight at 10 pm. Each volunteer pays RM600 for the return air ticket. The objective is first, provide manpower; second, the flight is full of breads, food, mineral water, I think this mission is one of the best relief operation we delivered so far.*

On the other hand, when I asked Fakhrul Mansor, a strategic and operational officer from an assisting government agency, about his experience working with the military, he explained that the level of distrust and the different command systems distanced them from in-depth collaboration. His observation was:

> *Military has their own system, command and control, strategy. We coordinate with them, we discussed with them on areas that are not covered. We tell them we will go to specific place, we report back our findings....just sharing information with military.*

Under the first-level focused code "varying attitude towards NADMA's capabilities", varying open codes such as approving, scepticism, organisational re-structuring and development were generated. Georgia, from an international NGO, welcomed and recognised the positive changes that happened in Malaysia's disaster management institution, she contended: *"positive* [development] *now is...they have been some changes made. The agency* [NADMA] *has been established directly under the Prime Minister Department. This is* [a] *positive step"*. On the other hand, Lim Chiang Hock from a major local NGO, provided an example and elaborated that his organisation welcomed collaboration with local government agencies. He was convinced that it was the right move because it would make his organisation's field work easier especially when the request came from government officials for *"they will assign officers to facilitate our work"*. Zamrud Mederka, from another major local NGO, observed that though some forms of collaboration between her organisation and government existed she was

reserved about further in-depth collaboration because she believed current policy lacked enforcement. She also lacked confidence in the government agencies' long term commitment. Conversely, Sivaragam Jaya, a strategic participant from a major local NGO, was sceptical about NADMA's operational capability to deliver quick, coordinated, effective relief management. According to Jaya, "*same thing will repeat. There is no change*". The attitude towards NADMA varied widely, ranging from welcoming, through reserved to sceptical.

On the other hand, Benedict, an experienced strategic officer from a UN agency, argued that cultural differences and a sense of distrust in anything foreign could have contributed to the gaps for NADMA to strengthen its overall performance within national disaster management. Benedict observed:

> *…should not be regarded as a shame to accept international assistance. It should be a little bit more managed. Well, the government may know exactly the requirements, some of the requirements are unable to fulfil. This gap can be filled by external organisations. Without feeling it is a shame. There is a nationalist behaviour or attitude, that we can do it, we don't need any external support. But in reality, specific support are required.*

This explains how the second-level focused code of 'level of trust among actors' was derived from the three first-level focused codes of "observing cultural differences and sensitivities in disaster relief operation", "accomplishing mission despite challenges", and "varying attitudes toward NADMA's capabilities".

4.3.4. *Unclear organisational roles and legitimacy*

This second-level focused code is a result of the integration of the three first-level focused codes "setting up a new nodal national agency", "understanding actors' background in disaster management", and "reviewing organisational roles and attitudes in disaster management". I began by examining the first-level focused code "setting up a new nodal national agency". The participants showed mixed interpretations ranging from a rather straight-forward observation (e.g., welcoming, reserved) to a more strategic and operational mode (e.g., proactive approach in planning and anticipating, adaptive capacity). Not entirely taken by surprise, NADMA, the national focal point of disaster management, is not clear about its role after one year's operation. Zain Ahmad, a strategic officer from NADMA, expressed his concern as follows:

> …[We have to] *to come up quickly, policy and standard operating procedures, so we can have a clear path and understand what NADMA's role, and where it is leading to. This should be the first priority... After one year,* [in NADMA], *I am worried. After one year, we still like not having clarity of role.*

When NADMA's organisational priorities and roles are not clearly known to external stakeholders, these partners are confused about the objectives, means and benefits of collaborating with this central agency. For that, Zain Ahmad responded that the establishment of NADMA was a quick win although NADMA is still short of competent officers to implement its strategic and operational mandate. Ahmad's view is:

> We [NADMA] *already has the institutional aspect, only how to further strengthen NADMA as a national focal agency. We need people, leaders to move forward.*

When analysing open codes for the first-level focused code of "understanding actors' background in disaster management", I was aware that some participants regarded their current roles in disaster management as an evangelistic mission whereas, for others, it was merely a job. An example of a high-spirited participant can be seen in Aminah Ishak's personal experience. Ishak left her previous job in an NGO and was now a UN officer. She recalled her experience as follows:

> *I was their first volunteer. My no is 0001. … I am keen to go to Gaza. So when my organisation offered the opportunity, I went* [to Gaza] *in 2007. I was at Syria border because 2007-2009 there were war.… I stranded, I spoke to someone, they told me they are almost 1.7 mil Palestinian living in Syria. Ok, I joined you to Syria's Damascus.*

Conversely, Che Singh, a senior state-based strategic and operations officer from another assisting government agency, demonstrated a business-as-usual tone when asked about his disaster management experience: "*We just do our duty, and work, that's all.…The natural disaster, we can't do anything. It's act of God. That's why we just try to educate the general public*".

Some participants recollected their experiences in previous disaster response missions more delicately. If I had not been interviewing the participants, these important observations could have been unnoticed. For instance, Aminah Ishak, from a UN agency, elaborated on the importance to distinguish aid workers' intentions in a disaster relief operation. Ishak asserted that: "*in humanitarian, there are good people, but also they are people make use of humanitarian for their own benefit. That was my first lesson*". Stefano Jean-Pierre, an experienced disaster administrator from an international NGO, observed that varied levels of accountability exist among participating organisations in a disaster relief operation that made it difficult to forge collaboration in emergencies. Jean-Pierre observed:

> *…because everyone have different level of accountability. When we are dealing with UN and international organisations, we have to understand, no one is accountable to the UN* [actually]. *It is purely a coordination mechanism.*

Similarly, Sivaragam Jaya, a leader from a major local NGO, implied that local NGOs were generally interested in cooperating with government agencies in disaster responses. However, this could be driven by the potential benefit of using public resources and not to complement each other's strengths in disaster relief. Sivaragam argued:

> *the government* [agencies] *have ...bringing in their resources. We have to play the game along with them* [in using their resources]. *Maintain neutrality is very importance for my organisation....We cannot go there. We have to manage from outside. In ...disaster relief, you need passion. Passion is very very important.*

Under the first-level focused code "reviewing organisational roles and attitudes in disaster management", I detected the view from NADMA's Abdul Rahman that NADMA is yet to understand emerging partners' intentions effectively and speedily in a disaster response. Rahman wanted to welcome these emerging partners, such as private sector companies and local NGOs, in future disaster relief operations but was yet to find a solution to coordinate their mobility effectively. Rahman said:

> *External partners* [both from the private sector or NGOs]...*previously we have seen they are coming in but not coordinated. Sometimes, they just arrived there ...who are you, I don't know you are coming, those kind of things* [happened]. *We do receive them but not coordinated well.*

Nordin Kamal, a senior officer of another assisting government agency recalled with disheartened tones about his experience of performing multiple, disintegrated tasks during a previous flood response. His roles included coordinating the receipt and deployment of relief items, press releases, situation updates, social media management, and countering misinformation. Fakhrul Mansor, a strategic and operational officer from an assisting government agency, explained reflectively that sometimes he was confused about his organisational role. He observed:

> *Malaysia is unique, every agency has respective speciality. ...I have better understanding on actual role of* [my agency] *after return from training organised by an ASEAN organisation, I try to talk to superior...may be one day we can do post-disaster damage assessment….*[But] *we are short of manpower to do post-disaster need assessment (PDNA). Now we are multi-tasking, cannot focus* [only] *on PDNA and recovery.*

This explains how the three first-level focused codes of "setting up a new nodal national agency", "understanding actors' background in disaster management", and "reviewing organisational roles and attitudes in disaster management" led to the establishment of the second-level focused code: "unclear organisational roles and legitimacy'.

Open Codes	First-level Focused Codes	Second-level Focused Codes

Examples:
- Resentment
- Defending autonomy
- Perceived satisfactory preparatory work

Examples:
- Positive and enabling factors in disaster response
- Asserting formal and coordinated approach

Examples:
- Considering cultural norms and customs in disaster relief
- Adhering to organisational principles
- Sceptical attitude towards NADMA's capabilities

Examples:
- Welcoming
- Dedicated humanitarian specialist
- Addressing organisational ego

Examples:
- Others….

First-level Focused Codes:
- Expressing emotions by disaster actors
- Searching for a preferred leadership style in disaster response
- Preparing for disaster through varied actions
- Experiencing political influence in the process of responding to disaster
- Seeking optimum solutions in emergencies
- Observing differences and sensitivities in disaster relief operation
- Accomplishing mission despite challenges
- Varying attitudes toward NADMA's capabilities
- Setting-up new nodal national agency
- Understanding actors' background in disaster management
- Reviewing organisational roles and attitudes in disaster management
- Others first-level focused codes

Second-level Focused Codes:
- Attitudes to disaster leadership
- Tensions between central and state stakeholders
- Levels of trust toward leading agency
- Unclear organisational roles and legitimacy
- Others second-level focused codes

Figure 4-1: A summary of examples of the process to identify first-level and second-level focused codes from open codes

Figure 4.1 summarises the process to identify the first- and second-level focused codes from the open codes. This summary is non-exhaustive since it presents only the first four of seven second-level focused codes discussed earlier. Beginning with open codes, supported with data analysis led to the discovery of the first- and second-level focused codes. See Table 4.2 for the detailed linkages between the open codes and first- and second-level focused codes.

4.4. Chapter summary

This chapter summarises the processes in organising the data and identifying codes through the first and second cycle of data coding. The first cycle produced numerous open codes but only 100 open codes were selected as relevant and essential to research question: "What hinders cross-sector collaboration in disasters?" The second cycle coding produced 19 first-level focused codes. These codes in turn led to seven second-level focused codes. Throughout this process, the interview transcripts of participants were the major data sources complemented by government documents and reports, news feeds and observations of participants' body

language during the interviews. Chapter 5 presents the analysis that led to the discovery of the key themes.

Chapter 5:
Data analysis 2: The three themes

> We join spokes together in a wheel, but it is the centre hole that makes the wagon move.
> We shape clay into a pot, but it is the emptiness inside that holds whatever we want.
> We hammer wood for a house, but it is the inner space that makes it liveable.
> We work with being, but non-being is what we use.

> *--- Daodejing (道德經), Chinese classic text, Laozhi (c.a. 6th century BC)*
> *Translated by Stephen Mitchell, 1988*

5.1. Introduction

This chapter continues the data reduction from Chapter 4 which discussed how the salient first- and second-level focused codes were identified from the open codes. This chapter focuses on discussing the process of how the focused codes were reduced to three key themes. Chapter 6 that follows discusses the study's results.

5.2. Identifying themes from focused codes

Illustrated by participants' comments, the following sections detail how the identified themes were developed from the various codes. The first theme: Perceived organisational status and hierarchy, results from the integration of two second-level focused codes: a) attitude to disaster leadership, and b) tensions between central and state stakeholders. Participants explained how the status of an organisation in a specific disaster environment may impact its credibility and competency in terms of leadership, mandate, planning and preparatory actions. The analysis showed that the first theme of organisational hierarchical structure is a barrier to collaboration between organisations.

The second identified theme relates to organisational motivation to collaborate. This theme was identified after integrating two focused codes: a) levels of trust among actors; and b) unclear organisational roles and legitimacy. These two focused codes showed how actions (or inactions), cultural differences and sensitivities, levels of engagement and performance of actors and attitudes towards organisational ability were interpreted by other stakeholders while developing collaboration. Such perceptions affect individual and organisational motivation to collaborate.

An organisation's ability to collaborate was the third theme identified from three focused codes: a) attitude of managing stakeholder relationships; b) orientation on building organisational capacity; and c) learning from experience and the lessons learned. This analysis uncovered that stakeholders' relationship management, learning and building capacity influenced the structures and mechanisms needed to collaborate in disasters. Table 5.1 summarises the process

to identify the three major themes from the broad analysis of the first-level focused codes and, subsequently, the second-level focused codes.

Table 5-1: *Categorisation of the first- and second-level focused codes and themes*

First-Level Focused Code	Second-Level Focused Code	Themes
Expressing emotions by disaster actors		
Searching preferred leadership style in disaster response	Attitude to disaster leadership	
Preparing for disaster through varied actions		Perceived organisational status and hierarchy
Experiencing political influence in the process of responding to disaster	Tensions between central and state stakeholders	
Seeking optimum solutions in emergencies		
Observing cultural differences and sensitivities in disaster relief		
Accomplishing mission despite challenges	Levels of trust among actors	
Varying attitudes toward NADMA's capabilities		Different levels of motivation to collaborate
Setting-up new nodal national agency		
Understanding actors' background in disaster management	Unclear organisational roles and legitimacy	
Reviewing organisational roles and attitudes in disaster management		
Interacting with multiple stakeholders during operation		
Being aware of intra- and inter-organisational relationship building	Attitude to manage stakeholder relationships	
Attempting of building relationships across different stakeholders		
Exploring preferences for collaboration among organisations		Organisation lacks ability to collaborate
Acknowledging multiple challenges in preparing for disasters	Orientation on building organisational capacity	
Identifying collaboration partners		
Learning experience	Learning from experience and lessons learned	
Being aware of lessons learned from previous experience		

5.3. First theme: Perceived organisational status and hierarchy

This section discusses how 'perceived organisational status and hierarchy' was identified as the first theme regarded as a key barrier to collaboration. This theme was derived by combining two focused codes: a) attitudes to disaster leadership; and b) tensions between central and state stakeholders.

5.3.1. *Attitude to disaster leadership*

Conceptualisation of disaster leadership differed from one organisation to another. The emotional display of organisation members towards the official disaster response and the organisation's approach in preparing for future disasters are likely indicators about how leadership is practised in a disaster. Traditional hierarchical government agencies generally preferred a "strong leadership" that they deemed necessary to administer, control and coordinate a disaster relief operation. Local major NGOs and the general public believe that a less hierarchical but engaging and collaborative approach is a more appropriate approach when dealing with a disaster. Public managers from NADMA and other assisting government agencies oscillated through a disaster response between leadership styles. At times these public managers applied the command and control model of leadership (e.g., NADMA towards aid recipients and NGOs) and, under other circumstances, a collaborative leadership was preferred (e.g., NADMA towards ASEAN organisations and UN agencies). However, command and control leadership was always the more preferred style in responding to a disaster. For instance, strategic participants from NADMA, ASEAN organisations and UN agencies felt that "strong leadership" was critical for an effective disaster relief response. In their view, "strong leadership" was synonymous with a command and control hierarchical, centralised leadership. However, operational members of other government agencies, major local NGOs and disaster aid recipients, preferred a consultative, collaborative leadership style to resolve complex, public problems in the immediate disaster aftermath.

Participants had varying perceptions of public managers' ability to prepare for a disaster from the perspective of internal (e.g., alignment of organisational strategy and structure) and external fit (e.g., alignment of organisational strategy and changing environment). International NGOs and ASEAN organisations viewed a public manager as a legitimate, powerful, indispensable entity in emergency collaboration, whereas major local NGOs viewed a public manager as an alternative partner who was difficult to deal with. When asked for his opinion on effective disaster leadership, NADMA's disaster strategic administrator, Abdul Rahman, did not provide

97

a direct answer; he portrayed leadership as demonstrated by his superior in disaster management as follows:

> *…very operational, …always on the ground, …know what is happening,* [and capable of]*...directing.* [And] *the advantage is, under him, you have Civil Defence [Force] under him, NADMA under him. …this is our sister or strategic partner at the state level.… whatever decision [made] at the central committee,* [NADMA] *will instruct and guide the secretariat at the state and district* [levels].

Benedict, a senior official from the UN agency, highlighted that the leadership demonstrated by NADMA as the nodal disaster management agency could be strengthened. Benedict perceived that "strong leadership" is crucial for an effective, well-coordinated disaster response. This perception arose from his years of following the development of Malaysia's disaster management protocols and mechanisms. Benedict believes that Malaysia has a bright future as the regional leader of humanitarian assistance and disaster relief but not without "strong leadership" and a strong political will. Nonetheless, Benedict also asserted that to achieve this goal, responsible public agencies should avoid "working in silo" but it is not clear how "stronger leadership" may promote the intended collaboration. Benedict's views are as follows:

> …[responsible national disaster management organisation] *needs to expand its capacities* [through] *stronger leadership. …understanding of different roles, not to work in silo, …and a change of mindset that focal points have to seek approval from their respective bosses* [for every single decision], [and risk] *time was wasted to mobilise resources.*

In part, Benedict's view was echoed by Sofyan Febrita from an ASEAN organisation. He claimed that a practical leadership style was effective for a disaster response. He emphasised that moral and legal authority were the two key features of an effective leader who made crucial decisions and judgements. He contended that:

> *…when* [a leader with moral authority] *talks, people listen, people will follow him…. disaster is not a normal* [situation], *the laws should be strong, less specialist, don't make it as a normal law, …. The clarity of disaster laws is important because only the law will provide leadership in crisis management. If the law doesn't highlight authority to coordinate, no agencies will follow….A leader, coordinator will need to decide. I also believe, as a leader, coordinator, you need to know the finish line. The process is something you can do by judgement, practice …leader will decide, we need to go* [t]*here. That's the authority and right of responsibility of a leader as a person, or on behalf of* [an] *organisation to decide where we want to go. Democratic leader, if unable to reach finish line, that's not effective. Authoritarian leader,* [though] *painful but if it brings to finish line, it is effective.*

On the other hand, a strategic official, Stefano Jean-Pierre, from an international NGO, and NADMA's officials with operational backgrounds, such as Fahruddin Iskandar and Safiya

Mahmod, shared the view that leaders need a stable temperament, positive attitude and mindset, and flexible attributes critical to develop cross-sector collaboration in emergencies. For instance, Iskandar's experience at a military base working under a General who practised a command and control style in overseeing logistic arrangements epitomised the importance of these attributes. At times, the General commanded that as soon as relief items were in the military camp, civilian officials, including Iskandar from NADMA, had no right to claim them except with his approval. Iskandar was under pressure while serving under that authoritative leadership at military camp. He recollected that:

> *It was quite tough of experience for me to work under the direction of a General. Sometimes, there are a little bit pushy,...Because of the setting also, I cannot say, speak a lots, there are differences when working in the military environment.*

Unlike NADMA's participants with a strategic background, operation-driven participants from other assisting government agencies tended to prefer a collaborative leadership style. Yusri Salahuddin emphasised flexible, empathetic leadership in mobilising resources because he: "*does not want* [his] *people to be stressed*". Fakhrul Mansor argued that that the existing law empowered him to execute his duty in search and rescue and even use public assets in an emergency. However, he would prefer: "*to collaborate and coordinate with others, so* [he is] *able to harmonise mechanism to run the rescue*". Zain Ahmad, NADMA's senior disaster administrator, agreed with the operational participants from other assisting government agencies on the importance of working together with other disaster actors. Ahmad's observation was: "*to facilitate and coordinate* [in an official disaster response operation]. *I cannot operate* [alone]…*We should be able to carry ourselves. That's why to me, the working together is very important*".

Contrary to public managers with a strategic background, the major local NGOs 'on the ground' suggested a proactive, engaging leadership style was more effective approach when interacting with disaster aid recipients. For instance, Pak Kok recalled how he encountered a family of five sitting in front of the remnants of their house with no idea of their next move. Pak Kok incentivised them to clear their house debris and paid them relief cash. This unconventional approach was not only effective in interacting with locals but also helped build trust quickly between his organisation and the disaster aid recipients. Instead of directives from above, disaster aid recipients prefer the consultative, engaging approach. They claim that orders from above were easily manipulated, were inefficient and failed to serve the best interests of disaster-affected communities. Two disaster aid recipients gave evidence as follows:

The village head will decide who will entitled for housing support from the central government. Some villagers did not get anything. I did not get anything [from the central government]. *Not even 5 cents from the central government. It is all up to the village head to decide….We are also human. How can we left out. Regardless how we voice out, still receive nothing. In the meeting, I also asked why the relief funds not released* [to me], *my other relatives did receive, but I receive no answer (*Harumi Mohammad, aid recipient).

I did not receive other assistance except this temporary house. My rented house though was inundated but it is not destroyed or collapsed. They [authority] *said you can only apply for further assistance if your house was collapsed or destroyed in the flood. So, we did not qualify* [to apply]. *Haha...it's all about the policy* (Megat Rabu, aid recipient).

5.3.2. *Tensions between central and state stakeholders*

Research participants from central government had different perceptions from those at the state level on what were the most critical tasks to perform or the optimum measures in responding to a disaster in a state. The variation of priorities and actions taken by higher-level authority units (e.g., represented by NADMA) to lower-level authority units (e.g., represented by a state government or district offices) is a barrier to collaboration between them.

NADMA officials are all based at national headquarters without a presence at state or district levels. Safiya Mahmod, an experienced operational official based at NADMA headquarters, emphasised that one of her major roles is to: "*make sure all* [responding] *agencies react according to National Security Council Directive no. 20*"[8]. However, Mahmod's view only reflected the understanding of the operational officials from the central agency; her colleagues at the state level did not share her view. Her superior, Abdul Rahman, iterated that NADMA is ultimately in-charge of disaster management in the whole country. He claimed that NADMA is: "*sitting in the driver's seat...and at the central level, the secretariat is still with NADMA...and will instruct and guide the secretariat at the state and districts*". These statements imply that by upholding the existing standard operating procedures, NADMA intends to legitimise itself as the sponsor, champion, facilitator and convener of national disaster management as mandated.

Conversely, state-based officials did not always agree that compliance to standard operating procedures was paramount in disaster responses. Instead, according to a state-based operational

---

[8] The National Security Council Directive No. 20 is the "Policy and Mechanism on National Disaster Relief and Management" (CFE, 2016, p. 12), the backbone of series of guidelines created since 1971 (revised in March 2012) indicating the responsibilities and coordination of multiple agencies at central, state and district levels in times of disasters particularly floods (Majlis Keselamatan Negara (Malaysia National Security Council), 2019).

staff member, Syed Anwar, the top priority of state government is to remain in control of a local disaster situation rather than be compliant to standard operating procedures *per se*. Anwar's observation is:

> *…when you worked with state government, personal relationship is quite important because as a Federal government official, and you are trying to...on behalf of the federal government, sometimes, state government wanted to be in control in certain things. But on current procedures, federal government is in-charge of disaster management but state government want to control it.*

UN agencies are consistent in their view of the importance of "strong leadership" in disaster response strategic planning and decision making. However, they seemed to move away from compliance to command from a higher-unit of authority when operating in disasters. In this circumstance, UN agencies shared the opinion of state-based assisting government agencies officers and queried the purpose of standard operating procedure compliance in disasters. For instance, Benedict, a senior UN official with a strategic background, argued that a coordinated and coherent disaster response is measured by the speed of mobilising resources, common situation awareness among actors, and the flexibility to design a practical action plan. Benedict's observation is:

> *The role of NADMA is not to hide behind the National Security Council Directive No 20, which is a very nice directive on the paper. But when there is a disaster, nobody … care about the directive. But care about how fast one mobilise the response....coordinate the response, need people to understand the directive, and translate directive into operational action.*

The state government has a different perception from a central organisation like NADMA in terms of control, coordination and compliance with standard operating procedures. District-based agencies or authorities project a different perspective from NADMA in terms of human resource competency and organisational priorities. A district is a second-level administrative regime below the state level in Malaysia. States in East Malaysia (i.e., Sarawak and Sabah) name a district as a *division* though in other states it is referred to as a *district*. A district officer is the administrative head of a district. Both operational and strategic participants from NADMA admitted that they count on district officers to chair and lead the district level disaster management committee as outlined in the national disaster management plan. However, Abdul Rahman, a senior administrator from NADMA, expressed concern that district officers may not have relevant disaster management experience and training; their priority is community development rather than disaster management. The rigidity of the current bureaucratic structure and procedures left little room for NADMA to make the necessary adjustment when dealing with disasters in local communities as the following evidence demonstrates:

[referring to district officers] *their main concern is about development, security issues. But come to disaster* [management], *it is something ...an entirely new discipline that they have to understand well. ... there are guidelines and standard operating procedures. But how it has been practised, are not well translated, I believed. Basically some of those key people are not very well versed* [with the standard operating procedures]. *When people get promoted* [to the current position]*, they have never done this things before. At district* [level], [managing disaster management] *is not top priority to the officers at district level* (Abdul Rahman, NADMA)

Participants acknowledged the challenges of balancing the relationships between central and state governments as well as the district level. NADMA acknowledged the importance of maintaining good working relationships with its collaborating partners from different administrative levels to ensure a well-coordinated response within the national disaster management plan. NADMA's strategic participant, Abdul Rahman, asserted the importance of controlling through an authoritative order that:

> *...now people know that there is a central agency looking at disaster management, who they* [can] *refer to for to give guidance and facilitate, to face than...in the ground. The issue is...if they are not managed, if they were just to jump there, it will be a problem to the management on the ground. Then the issue is they will not getting the cooperation as they expected. ...and in the process is not being handled, manage them, will be another burden to the already constraint ....mechanism down there. ... so we will instruct our officials to liaise with these people, to receive them...and to actually discuss...* (Abdul Rahman, NADMA).

In addition to the differences in administrative and operational priorities and limited flexibility in mobilising appropriate personnel to respond to disasters, the political factor also contributed to the tensions between central and state stakeholders. Nik Sidek, a school teacher at a government school and an aid recipient, ruminated on his experience of accepting a donation from an opposition party leader to rebuild his school's damaged computer laboratory. He argued that: *"till today, my salary was not adjusted because I have been labelled negatively. For being a civil servant, I have brought the opposition party into school"*. Public managers from NADMA contended that they played unexpected *middlemen's* role when performing official relief operations in states administered by a government of a different party from central government. The state government informed these public managers what kind of assistance they needed and the public managers were expected to pass on the request to the central government without formal or regular meetings between the state and central government representatives.

The delegation of directives on how a local flood relief operation is to be conducted is complicated. The directive comes from the central NADMA to state and district levels; the

tasks were performed by varying agencies and personnel at different administration levels. Fahruddin Iskandar, an operational official from NADMA, observed:

> *…the decision was made by the chairman of the disaster management committee at the federal* [central government] *level,* [but] *the Civil Defence Force is responsible at the state; and the Secretary of the State* [is responsible at state] *and the district level. So, for the* [immediate] *emergency response, it is* [not NADMA's responsibility but] *the Civil Defence Force.*

Notwithstanding the tensions between central and state stakeholders, there were areas where both groups of officials had similar views. For instance, Syed Anwar, a state-based operational staff member, agreed with Fahruddin Iskandar, an operational staff member based at the central level, on the importance of strengthening training in coordination among local (districts), state and central governments, and they were determined to enhance overall capacity through learning from 'best practice' in the region.

The delineation of varying attitudes to disaster leadership and the contest and conflict between organisations as experienced by participants, led to an assemblage of a more prevalent theme of organisational status and hierarchy. Understanding the intricacies of the inflexibility of organisations and individuals to a leadership model of his or her choice and balancing individual organisational and collective goals in responding to a disaster within a traditional hierarchical structure is crucial to fostering multi-stakeholder collaboration in disasters.

5.4. Second theme: Different levels of motivation to collaborate

Before presenting the second theme on how different motivation levels impact cross-sector collaboration in disasters, this section first discusses the varying perceptions among the stakeholders. These perceptions can be categorised as positive, neutral and negative. A positive perception happened between stakeholders when both organisations were enthusiastic, inter-dependent and have the confidence to collaborate in a joint activity for their mutual benefit. An example of a neutral perception was when two organisations were lukewarm to collaboration. An example of a negative perception was when two organisations attempted to avoid collaborating with each other unless required by law or in emergencies to do so; otherwise they acted separately. Myopia, unfamiliarity, previous interaction experience and organisations' structural limitations are reasons for differing perceptions among stakeholders.

Table 5-2: The perceptions of partners on cross-sector collaboration

Positive	Neutral	Negative
Example: NADMA and ASEAN organisations have a positive collaborative arrangement supported by agreements and official mandates[9].	Example: Though NADMA and other assisting government agencies in disaster management have a strong dependent relationship between them, in practice, they have a neutral collaborative arrangement.	Example: NADMA and international NGOs have a negative collaborative arrangement.
NADMA is positively engaged with ASEAN organisations in multiple ways. For instance, NADMA is committed to arrange staff from disaster management agencies to attend training organised by ASEAN organisations. Also, it actively participates in regional initiatives as a responsible member, and is keen to learn best practice through ASEAN.	*NADMA is new and lacks resources. Its capability and leadership are yet to be fully tested in disaster management.*	*NADMA does not see any urgent need to work with international NGOs. NADMA simply has many choices for partnerships. It is deemed sensitive and inappropriate for a national government agency to form a close relationship with a foreign entity such as an international NGO.*
ASEAN organisations are committed to work closely with NADMA to maintain the legally-binding relationship and acknowledge NADMA's position as a champion of national and regional disaster management.	*Other assisting government agencies are more established and resource-rich. They see themselves as equal peer agencies with NADMA though they receive directives from NADMA in emergencies. Often, NADMA counts on other assisting government agencies for coordination, information and resource mobilisation. NADMA remains diplomatic, neutral in action with its peer agencies.*	*International NGOs claim it is difficult to meet senior government decision makers and claim that public managers seem not interested in developing meaningful collaboration. Shallow relationships between NADMA and international NGOs were detected. Further, their relationships are boxed in by cultural differences. International NGOs struggle to build trust with NADMA.*

Table 5.2 summarises and highlights several examples of perception differences between key partners. Three examples of the varying perceptions between stakeholders are presented as illustrations although there are diversified perceptions among stakeholders. An example of a positive perception between stakeholders is the interaction between NADMA and ASEAN organisations. The entities have a positive collaborative arrangement supported by agreements and official mandates. Because of the positive perception between them, NADMA encourages its officials to attend capacity building programmes organised by ASEAN organisations and

---

[9] The Malaysian government signed the legally-binding ASEAN Agreement on Disaster Management and Emergency Response (AADMER) in 2005, and it came into force on 24 December 2009. Retrieved from http://agreement.asean.org/media/download/20140119170000.pdf and http://www.unoosa.org/documents/pdf/spider/activities/2016/india/Day3/Plenary_session2/5_Years_of_AHA_Centre_mmltumonong.pdf

takes part in various regional initiatives. In return, the ASEAN organisations demonstrate their support for NADMA through sharing information, technical expertise and best practice.

An example of neutral perception is between NADMA and the other assisting government agencies in disaster management. They have a neutral collaborative arrangement because both parties have relevant authorities, specialities and resources, and opt to first operate within their respective machinery unless emergency collaboration with other organisations arises. To some extent, these assisting government agencies have more resources than NADMA, at least during its inception phase, and do not see the need to work together with a relatively new central organisation. In practice, central directives will always come from NADMA to these assisting government agencies for further coordination and action, particularly at state and district levels, which explains why any joint activity between them is a result of cooperation and competition and a balance in power distance.

An example of negative perception involving stakeholders in disaster management is demonstrated by the interaction between NADMA and international NGOs. NADMA, as a nodal national agency, has many options in choosing its preferred partners and international NGOs that approached NADMA were only some of many intended partners. Except with consent from top government officials, NADMA is unlikely to forge closer cooperation with foreign entities, such as an international NGOs, to avoid being regarded as insensitive to national civil service tradition. Differences in organisation values and culture, a mismatch of priorities and timing for cooperation, may have reduced collaboration between NADMA and international NGOs. The negative collaborative arrangement, often seen as potential collaboration, was stopped, which resulted in it either being aborted or stalled.

Understanding the dynamics of the varying degrees of perception between organisations as a result of their respective positions and functioning is crucial to following the subsequent analysis in relation to motivation. Acknowledgement of the existence of these different perceptions between organisations helps understand the discussion of the second theme identified in the analysis: different levels of organisational motivation to collaborate can hinder inter-organisational collaboration in a disaster. The following two propositions informed the second theme: a) levels of trust among actors; and b) unclear organisational roles and legitimacy.

5.4.1. *Levels of trust among actors*

A high degree of trust between collaborating partners is required for effective collaboration. Conversely, a low degree of trust between them will discourage joint efforts from taking place. However, trust is difficult to build in a short period and a disaster response is time-sensitive and a state of uncertainty. In the absence of a trustworthy relationship, mutual positive expectations among collaborating partners are difficult to develop although positive expectations are imperative to achieve intended common results. If circumstances allow, a convener will collaborate only with a partner they trust. Without mutual trust, partners are unmotivated to collaborate and, instead, try to resolve challenges in disaster management alone or they look for another partner.

Different levels of trust were evident between NADMA and its collaborating partners. NADMA and other government agencies have relatively higher trust towards ASEAN organisations but barely trust international NGOs. Stefano Jean-Pierre, a participant from an international NGO, admitted there were challenges to overcome in building trust with public managers. Georgia, Jean-Pierre's co-worker, illustrated the level of trust between her organisation and the public managers as follows:

> *I think this is probably the way to approach the Malaysia is quite different, it is a very relationship-base society. To perceive...foreigner or international organisations may be more difficult for us to engage, ...but it has been a real struggle for us. For me, it is probably the most difficult country for me to work with. Overall, it is always a nice and good relationship when we meet with them, but when you are trying to move something forward a more strategic way that...I think we face obstacles.*

Public disaster managers did not reject the idea of forming working relationships with specialised UN agencies but these are limited to formal settings and, at times, are inconsistent. In general, public disaster managers were unlikely to be motivated to foster in-depth relationships with UN agencies because such intentions could be interpreted as aligning to *foreign assistance;* trust towards foreign entities is generally low within the traditional civil service system with its high respect for hierarchy. Benedict, from a UN agency, claimed that public managers "*did not fully utilise the capacity that UN has* [provided*]… in Malaysia…* [the working relationship is] *not in a proper or organised way. Just go by the wind".* Conversely, NADMA, and some of its affiliated government agencies, have fostered a higher trust level with ASEAN organisations. NADMA's Abdul Rahman acknowledged his organisation's close collaboration with ASEAN organisations was attributed to the existing legal agreement between Malaysia and ASEAN. NADMA does not regard ASEAN organisations as *foreign*

entities because NADMA's officials are represented in every decision making on regional cooperation. In return, ASEAN brought new perspectives in disaster management to Malaysia through NADMA. Rahman's argument is:

> *We are looking at putting a standard, tie it with the capacity of the region through the ASEAN organisation ...at the ASEAN Summit, the commitment is One ASEAN One Response, how do we translate* [into NADMA's strengths]... *learning* [from ASEAN to] *more than response. You talk about mitigation, capacity building, knowledge* [management] *and innovation, though it is not coming to ask ASEAN organisation to do this ...mitigation but it is about the knowledge. It is about the innovation that we can gather. So, we are basically looking at the ASEAN level, we are at par and keep abreast, we adjust, able to come in responding in the region as one.*

Participants with an operational background appreciated the wide range of disaster management training ASEAN organisations provided to them and were committed to advance a legally-binding relationship. Iskandar, an operational official from NADMA, described the high level of trust between public managers and ASEAN organisations as follows:

> *...when something a happened, let's say a major earthquake happened in Sabah one day, we might need assistance from ASEAN friends. ...It is best for us to know how they work. ... When we work together with other organisation, we are exposed to their mechanism. There are some opportunities for our officials to go working or training with them. So, we are learning new things. ....ASEAN organisation is especially because we are the focal point, and we are a new agency, so we need to engage with ASEAN organisation because most of the staff here is new staff. They do not know much about AHA Centre especially because that's our mechanism, that's legally-binding, and lots of engagement is also needed to be done with ASEAN organisation.*

In this study, expectations of reciprocal positive action did not always happen as anticipated. For instance, disaster aid-giving organisations, such as assisting government agencies, and aid recipients have a complex, varied trust relationship. In general, disaster aid recipients lacked trust in uniformed officers such as Police or NADMA despite their services being genuine as judged by public managers. This was common, especially when aid recipients were residents where the state government was not from the same party as central government. Disaster aid recipients expressed their scepticism towards government officials, regardless of them being from the state or central level. For instance, Noh Agus, a disaster aid recipient, stated that he did not trust the Police member who requested him to evacuate. Agus also stressed that he did not approve the authority's requirement that applicants for government relief fund to rebuild a damaged house was applicable only to those whose spouse was not a foreigner[10].

---

[10] Many locals have Thai wives because of the proximity of the Malaysia-Thailand border

Harumi Mohammad, another aid recipient, when asked if any government agency came to offer assistance while she was evacuated, responded "*No one. .... We were left alone. We stand on our own feet*", and survived the first few days with her own limited food and water. In general, disaster aid recipients regard public managers as lacking empathy, incompetent and bureaucratic. Other flood aid recipients living in different villages provided detailed accounts of their experience dealing with public managers as follows:

> *I complained to the Minister about the delay in providing assistance during the most difficult time, and have not heard of any solid plan for rebuilding the Manek Urai* [town]. *I told him I have received more assistance from NGOs rather than from the government* (Noh Agus, aid recipient)

> *The village head will decide who will entitle for housing support from the central government. Some villagers did not get anything. I did not get anything* [from the central government]. *Not even five cents from the central government. It is all up to the village head to decide. ...I did not get much help.* (Harumi Mohammad, aid recipient)

Conversely, public managers, such as NADMA officials, claimed that aid recipients had attitudinal problems. The division between disaster aid givers and aid recipients widened and hindered the organisation of dialogue, joint activities and disaster awareness campaigns involving both parties. Public managers from NADMA and other assisting government agencies saw the people in need as self-pitying victims who failed to help themselves. When asked about his perception of rural disaster aid recipients, Fakhrul Mansor, a public manager from an assisting government agency, portrayed them as: "*stubborn because they said it* [flood] *is normal and* [is an] *annual event, like water festival".* Safiya Mahmod, a senior operational official from NADMA echoed that:

> *Victims are not grateful...their attitudes are that everything should be provided by the government. If we are late, or cannot meet their expectations, they will get angry and they will spread rumours throughout the media; the victims' attitude is the biggest challenge...*

Abdul Rahman, NADMA's strategic official, stated that the take-it-for-granted mentality among aid recipients was the major obstacle preventing public agencies delivering a successful disaster response. Yusri Salahuddin, a participant with an operational background from other assisting government agency, agreed with Rahman's view. He maintained:

> *We are dealing with public who has zero knowledge about disaster, you try to convincing people to move from one place to other, they will not listen. When the water level raised till the roof top, they asked us to rescue them. That's 2014*!

Though the level of trust between public managers and disaster aid recipients was low, evidence suggests that there was a higher level of trust between disaster aid recipients and local

NGOs. Aid recipients such as Peter Gooi, Rabbiya Sulong and Megat Rabu, were grateful that they received timely relief support provided by the NGOs after days of waiting in vain for government aid. Local communities trusted the major local NGOs for their extensive interaction with them after the disaster response phase through continuous volunteer training. This training can *"prepare themselves for future disaster, and help other kampungs"* as Sivaragam Jaya, a strategic leader from a local NGO described it. Pak Kok, a participant with strategic background from another NGO, shared how his organisation gained trust by respecting local customs and was committed to rebuild the communities:

> *So when we mobilised, those people who are well educated, non-educated, young and old, we told them to sit them along railway track, because there is no places as empty as railway tracks. …. Because before we start, we have to tell them what to do, things like that. They do their 'doa'* [prayer]. *There is an imam to help them to do the prayer in their own way... You can see the very well-built and educated people, why were they be there? They need help.*

The data show that NGOs, in general, were more keen than public agencies to build trust with other stakeholders. For instance, Sivaragam Jaya, from a major local NGO, reiterated that he and his organisation were committed to meeting the disaster-affected population frequently to build trust, and acknowledged that trust-building is a time-consuming, iterative, complicated human psychological process often intertwined with cultural differences as experienced by many participants.

However, this study found that the levels of trust between NGOs were weak; this limitation restrains collaboration between them. Not only are organisational values and missions dissimilar, but local NGOs had no urgency to work with each other although operating on the same disaster field. For instance, Lim Chiang Hock, a participant from a major local NGO, claimed that *"the idea of having two NGOs to work together for a similar task is difficult"* because of a lack of trust. Pak Kok and Sivaragam Jaya, from local NGOs, concurred with Lim's view. To some extent, even during the height of a disaster response, some NGOs mobilised in the disaster area did not intend to join hands with counterparts to reach out collectively to larger disaster-affected communities. At times, these NGOs competed with each other for influence and the extent of aid distribution. In addition to a lack of trust, differences in organisational values and objectives, specialities, resources and experience as well as concern about losing control and discretion, distanced NGOs from collaborating with each other. Participants from major local NGOs admitted the challenges of collaboration between them. Pak Kok, a strategic leader from a major local NGO, summarised such challenges:

> *…so far we have not tried to collaborate with any organisations. We don't feel the need in the sense....we are on the ground to see what is happening, what is to be done...who is going to do what, so we never thought about trying to mobilise or collaborate with other NGOs. I never thought of collaboration with any parties because...shouldn't be a problem to collaborate with them* [other NGOs] *as long as they agree with what we are going to do.*

Notwithstanding the varying levels of trust among NADMA and its collaborating partners and the people affected by the floods, all participants agreed that mutual trust is a crucial component to developing collaboration. Nonetheless, building trust is time-consuming and positive results are not guaranteed. Varying levels of trust of unmotivated stakeholders to collaborate more closely hinder inter-organisational collaboration in a disaster.

5.4.2. *Unclear organisational role and legitimacy*

Of the 30 participants, 80% (n=24) welcomed the official inception and operationalisation of NADMA. However, NADMA's internal partners (i.e., stakeholders at the same jurisdiction level) and external partners (i.e., stakeholders across central and state levels, regional and international organisations) were unclear about its legitimate authority, organisational role and technical capabilities. When these uncertainties were combined, collaboration and mutually agreed collective action were affected. The major challenge for NADMA as the central coordinating agency is its limitations in exerting its authority clearly and effectively. In addition, because NADMA has not yet proven its worth in action, it has a lack of credibility among its peers. NADMA competes for resources with other government agencies and struggles to gain trust from top government officials. ASEAN organisations and international NGOs argue that a more comprehensive legal framework is needed to make NADMA an effective central coordinating agency. Advice from a senior participant from an ASEAN organisation encapsulated the essence of organisational legitimacy in effective disaster management as follows:

> *…disaster is not normal, the laws should be strong, less specialist, don't make it as a normal law, laws should reflect the crisis management in-depth. Please state in the law, the authority, who play what. The clarity of disaster laws is important because only the law will provide leadership in crisis management* (Daniel Rasyid, ASEAN regional organisation)

International NGOs argue that NADMA needs a comprehensive legal framework such as the disaster management laws that have been ratified in Indonesia and the Philippines. Sidek Ismail, a participant from a major local NGO, said his organisation had been: "*appointed formally by NADMA to be the lead coordinator among NGOs in times of disaster. … For that*

reason, we are honoured... [but] *there is something that we need to do"*. However, Ismail's senior colleague, Sivaragam Jaya, has many questions about the actual empowerment and authority that his organisation is entitled to because: *"there is no policy. No act, policy or directive. If I go to ask..., I coordinate you. They will ask who are you* [to coordinate me]?" Georgia, a legal expert from an international NGO, asserted that NADMA is unable to *"coordinate widely with other government agencies during the response"* because of the lack of a comprehensive legal framework. As a result, the Malaysian government is unable to declare a state of emergency swiftly when a mega disaster strikes, which, in turn, impedes NADMA from accessing urgently needed resources as intended by its original design and objectives. Currently, only the constitution permits such an emergency declaration but not without lengthy executive and bureaucratic approval processes. A participant from an international NGO contended that:

> *it is very important* [to] *have a clear process on how you declare emergency, how long emergency will be there for, also what other kind of* [civil] *rights will be suspended during an emergency... without those mechanism,* [it is] *very hard for those processes to kick in and* [thus the existing procedure*] becomes very ad hoc. We could see that Malaysia becomes quite ad hoc* [nowadays]: *personality driven rather than systematic response.* (Georgia, international NGO)

In response, NADMA argues that it aimed to learn from best practice and to collaborate with experienced international organisations to complement its strengths. NADMA's Abdul Rahman, a strategic leader, asserted: *"in making* [its] *legal framework and governance sector more robust...and filled the gap"*. However, Georgia, from an international NGO, said it was incomprehensible to her why Malaysian public agencies were reluctant to accept her organisation's advice despite it was internationally proven useful. Georgia lamented:

> …[public agencies] *seem to really do not want to pick up advices from international organisations...it is probably been the most difficult country* [and public agencies] *for* [me] *to work with.*

In addition to lacking a comprehensive legal framework, understanding the priorities of NADMA's planned resilience (actions taken before a disaster to enhance the probability of an effective disaster response) (S. Cutter et al., 2008; Hall et al., 2016; Kahan et al., 2009) was not clearly understood by partners. For example, partners were not convinced when NADMA emphasised compliance with existing standard operating procedures without first addressing the ground work of the disaster management legal framework. As a result, interested partners were discouraged from collaborating with NADMA. First, not all relevant agencies are familiar with the National Security Council Directive No. 20, including district officials who chair the disaster management committees. Second, not all public managers agree with NADMA about

the importance and urgency to comply with standard operating procedures. Participants from major local NGOs (e.g., Sivaragam Jaya) observed that such standard operating procedures are always ignored in a disaster response. Benedict, from a UN agency, agreed with that observation.

Participants from international NGOs, operational staff of NADMA, and senior staff with both strategic and operational backgrounds from other assisting government agencies, agree that the current National Security Council Directive No. 20 is not strong enough and is difficult to enforce and comply with. Participants from an international NGO expressed their concern clearly on the importance and urgency on fine-tuning the legal framework and not complying with existing standard operating procedures because the framework is crucial for effective organisational coordination across different jurisdictions and to strengthen accountability. Georgia and her superior, Stefano Jean-Pierre, from an international NGO argue:

> *unified framework* [that] *can affect the implementation of standard operating procedures, enable* [authority] *to coordinate more widely with other government agencies during the response …national coordination was generally poor horizontally and vertically, also with other stakeholders outside of the government* (Georgia, international NGO)

> *…coordination requires accountability … and* [the necessity of] *making decision based on clear criteria and needs (*Stefano Jean-Pierre, international NGO).

NADMA, as the national disaster management leader, can strengthen its legitimacy only with the development of a comprehensive disaster management framework. Because of the lack of an essential disaster management framework and disoriented positioning and enforcement of existing standard operating procedures, participants (particularly major local NGOs) are confused and unmotivated to collaborate with public managers during disasters.

In general, participants were largely unclear about the authority of the newly established NADMA. Even though a legal mandate is in place, NADMA is unable to exercise its authority or power effectively because of internal restraining forces (i.e., on-going internal restructuring of the organisation and the national disaster response mechanism; key personnel are yet to be employed or to become familiar with new roles). Adding to the confusion in exercising power are overlapping organisational responsibilities, missions and resources. For example, government agencies do not have a clear demarcation of duties about who should do what in administering flood evacuation centres and how disaster information should be collected, verified, and disseminated. No doubt, in its establishment, NADMA was given an official mandate as the central coordinating agency but having official status does not automatically allow NADMA to exercise its authority effectively. As a fledgling organisation, NADMA faces

several limitations: lack of financial resources and experienced manpower (at least during the initial stage), and has yet to establish close working relationships with other agencies (the capability of a public agency to work in harmony with its peers is a tradition of Malaysia's civil service). This has obstructed NADMA from exercising its authority.

Two senior NADMA employees explained how the "liability of newness" (Bruderl & Schussler, 1990; Hager, Galaskiewicz, & Larson, 2004) has limited NADMA's ability to exercise its power effectively:

> *…With the formation of NADMA, we have to move out from the National Security Council framework. So we need a* [new] *legal framework as our source of authority.* (Abdul Rahman, NADMA)

> *when we start … the first year in operation, we do not have money…sometimes, state government wants to be in control in certain things. Based on current procedures, federal government is in-charge of disaster management but state government wants to control it. So we have to seem 'dancing'* [between federal and state governments in balancing this power-seeking relationships]. *…NADMA aims to bridge some of the gaps in other provisions that relates to disaster management that is deposited with*[in] *the various responding agencies.* (Zain Ahmad, NADMA)

The ambiguous organisational role compounded by the lack of a comprehensive legal framework and an over-emphasis on standard operating procedures compliance are obstacles to developing inter-organisational collaboration in a disaster. This is compounded when some potential collaborators perceive their role as more important than others. When asked about his organisation's role in disaster management, Fakhrul Mansor, a senior member of an assisting government agency with an operational background, explained that his organisation's service is increasingly needed in national disaster management. He observed that his organisation plays multiple roles including administrative secretariat, training provider, evacuation centre manager, search and rescue services provider, disaster awareness programme advocate, and simulation exercise designer, among others. Mansor argues that the trend of too many organisations performing similar tasks is an alarming phenomenon. He observed:

> *…now in Malaysia, everybody do the rescue* [operation]...*Civil Defence, Bomba* [Fire and Rescue Department], *Police, SMART...*[and] *it's difficult to integrate or communicate our system to that of international system.*

Similarly, Nordin Kamal, from another assisting government agency, shared his views about how he performed multiple roles at the National Disaster Command Centre during the 2014 Kelantan flood. He recalled how he communicated with the media, made logistical arrangements, drafted reports, facilitated international aid receipt, updated the latest

information and situation reports to stakeholders and leaders, and countered any misinformation appearing in the media.

Zain Ahmad, a senior NADMA official, acknowledged that, after establishment, it is important for NADMA to have a clear role otherwise its credibility will be adversely affected. Ahmad warned that failing to outline NADMA's role clearly will "*affect the credibility of NADMA. This is the challenge during* [NADMA's] *formative stage*". Ahmad's argument is:

> [NADMA needs] *to come up quickly, policy and standard operating procedures, so we can have a clear path and understand what NADMA's role, and where it is leading to. This should be the first priority... after one year, we still like not having clarity of role.*

Collaborative partners are concerned that the direction and intended results of a new collaborative way might not be in concert with the respective organisations' values and culture. For example, some organisations regarded disaster relief as their most important mission; others wished to offer a holistic, comprehensive approach to building community resilience against disasters. According to Fakhrul Mansor, a senior participant with both strategic and operational experience from another assisting government agency, his daily routine was more inclined to prepare for a disaster response in terms of training, organising simulation exercises, strengthening search and rescue capacity, and coordinating a secretariat. Stefano Jean-Pierre, from an international NGO, asserted that his organisation emphasised a holistic approach covering all phases of disaster management: preparedness, mitigation, response and recovery, when offering assistance to disaster-affected communities. Under such circumstances, even if both organisations maintain good relationships, they may not be motivated for closer collaboration because of dissimilar organisation objectives. Jean-Pierre's argument is:

> *...for us, emergency response is a component of our full package of support that we give to the affected community. We want to increase the level of resilience...*

Notwithstanding the lack of common objectives or diverse inter-organisational relationships, public managers and their partners intend to remain relevant in disaster management.

Sofyan Febrita from an ASEAN organisation, argued that, in the face of a disaster, upholding certain standards or international humanitarian principles (i.e., humanity, impartiality, neutrality and independence) (IFRC, 2015; OCHA, 2012) was meaningless. Febrita was firm with his opinion. His argument is:

> *...is it OK to let more people die as long as we apply international principles,* [or] *as long as it is civilian led?*

114

Febrita's colleague, Jerry Ahmad, maintains that, at times, his deployment to Malaysia after the flood was not necessarily to save lives or protect property but for a show of good will and solidarity. His argument was:

> *...more of... offering our support as... an expression of solidarity among ASEAN. It is more for the AHA Centre than ... facilitating and showing to the affected state of the solidarity ...gesture from all other ASEAN Member States.*

The lack of a comprehensive legal framework, a consensus on standard operating procedures and unclear organisational roles leave partners unmotivated to coordinate and collaborate during normal times and more so in emergencies such as post-disaster relief operations.

5.5. Third theme: Organisation lacks of ability to collaborate in disasters

The lack of organisational ability to collaborate in disasters is the third barrier that can obstruct the development of inter-organisational collaboration in a disaster. Three factors contribute to the inability of an organisation to collaborate in disaster: a) difficulty in managing stakeholder relationships; b) an orientation on building organisational capacity; and c) inadequate learning from previous experiences.

5.5.1. *Difficulty in managing stakeholder relationships*

Relationships play an important role in Malaysian public administration. These relationships refer not only to normal working relationships in a formal setting but also include informal associations with other agencies in a complicated, rich web of human interconnectedness. Failing to manage stakeholder relationships in the Malaysian context hinders organisations' ability to collaborate with others in emergencies. Appendix 5A details the various relationships among disaster management stakeholders in Malaysia.

Participants from NADMA and other assisting government agencies agree that maintaining good relationships at both organisational and individual levels was critical to accomplish organisational goals, deliver results and resolve complicated public problems too difficult for organisations acting alone. Zain Ahmad, an NADMA participant with a strategic background, summarised the importance of maintaining good relationships as he argued: "*uniformed agencies are very hierarchical in structure...if you have good relationship with bosses, 80% of the job can be done*". Fahruddin Iskandar and Safiya Mahmod, operational staff from NADMA, agreed with their superior that maintaining amicable working relationships with sister agencies is vital in delivering a coherent disaster response. However, there is a gap to convert such positive attitude into practice. Mahmod envisioned the importance of a fraternal

relationship in stating:

> *…needs to develop a good relationship between federal and state governments because district officials will listen to the state government* [only]. *If we did not have...a good relationship with state government, it will be a problem for us to give orders to the district office.*

Though positive relationships were deemed a prerequisite for collaboration, collaborating partners often found it difficult to develop good relationships with public managers. Time and trust are essential in building the good relationships that are crucial for collaboration as discussed above. In reality, public managers have limited time to build relationships for they are always on rotation or deployment, on-the-job training or further study, and their external partners may have a more diverse role than their counterparts in a particular government agency. Thus constant personnel turnover, re-deployment and a mismatch of organisation objectives and strategies complicate the process of building good relationships among collaborators. Participants from both major local and international NGOs shared these views. For instance, Stefano Jean-Pierre, from an international NGO, explained that his portfolio was much more diversified than most of his counterparts in the government:

> *I have 12 officers that report directly to [my office], covering all 38 countries of Asia-Pacific. So, I ensure the compliance of accountability, direction that we want to achieve. I fulfil both in the development and also humanitarian side.*

The difficulty in reaching the 'right person' within government departments is another barrier to developing good relationships with public managers. The difficulty in developing a good working relationship with public managers and accessing the right decision makers, discouraged interested partners from promoting collaboration. Participants from international NGOs based in Malaysia observe that Malaysian society has a unique culture where interacting or collaborating with foreign experts was deemed *inappropriate*. According to Georgia, a foreign national and senior participant who works for an international NGO, public managers in Malaysia seemed reserved about interacting and sharing information with non-nationals. Georgia observed:

> *… it is also a cultural thing, I think also... the way to approach the Malaysia* [senior officials] *is quite different, it is a very relationship-based society…. I think a lot here depends on relationship that you might have with the person, how you can have the access to certain decision-makers. It doesn't seem to follow a system that is clear on how you can engage.*

Not only NGOs were unclear about the attitude of public managers toward collaboration, other assisting government agencies expressed similar concerns. Jamal Syukur, a participant from an assisting government agency, stressed that special connections and the ability to be resourceful

were necessary. Syukur claimed that: "*the right person for the right job. If you do not know the process* [to resolve operational challenges]...*you must know two ways, the normal procedures and the special way. They must know how to do coordination on that*". The *special way* that Syukur highlighted refers to a personal, strategic network or *guanxi* (Barbalet, 2015; Luo, Huang, & Wang, 2012) with influential or prominent people. However, an innovative, resourceful approach through a strategic powerful networking as demonstrated by Syukur proved effective in a particular circumstance but is far from a systemic holistic solution.

At times, participants from different backgrounds who desire to build inter-organisational relationships were reluctant to sacrifice their respective organisation's goals for the sake of common goals. Participants from major local NGOs, in particular, had concerns that closer collaboration with public agencies might mean that that the organisation's discretion and control would be compromised. Lim Chiang Hock, a participant with an operation background from a major local NGO, explained that his organisation was dedicated to continue supporting the livelihood of aid recipients even after the official disaster relief operation concluded. It was his concern that such a plan would be adversely affected if closer collaboration between his NGO and public agencies took place because it is not common for government to provide extra livelihood support after a disaster relief operation. Lim argues:

> ...*we always hope to remain an office, a group of volunteers at the disaster-affected areas, so they are able to self-help. Why we stay after response phase? Because we compliant to* [the] *Master's* [11] *guidance. Master always say we will continue support till victims can, again, lead a good life. Ultimately, to continue support people in poverty. The office is more meant for local people to stay connected.*

Apart from aid recipients, most participants had over 10 years disaster management experience with some having over 30 years. The long service period not only demonstrated participants' professionalism and experience but also highlighted their dedication to and ethos for disaster management. According to the participants, there were times when they put results before relationships. The deliberate act of putting results before relationships was evident from participants from UN bodies and aid recipients who had experienced mega floods. For instance, Aminah Ishak, an UN employee with years of experience in responding to various disasters in Malaysia and overseas, opted to quickly deliver relief items to geographically-challenged areas rather than maintain friendly relationships with important people:

---

[11] 'Master' is referring to the founder of the NGO who is also a spiritual leader.

I run out of battery. They told me this one belong to politicians so and so...I was, I don't care. I want the torch light, batteries...one religion man told me I cannot take this. Hello, this is a disaster, you have lots of this....we are running of battery cells....while they are discussing, I took the things and gone.

Participants from an ASEAN organisation with strategic and operational backgrounds shared similar views to NADMA staff and other public managers on the importance of building good relationships with a wide range of collaborative partners. Daniel Rasyid, from an ASEAN organisation, recalled that there were cases when a self-sufficient country accepted external assistance after a disaster, such as Japan after the 2011 earthquake and tsunami, "*because this is to maintain foreign policy* [by offering assistance to a much well-to-do disaster-affected country]... *That's the DNA of the disaster relief, we cannot control everything*". Rasyid's view reflected that servicing a country's higher interests not necessarily directly related to a disaster may be a reason for collaboration with other partners though not many understood that situation. On merging humanitarian action and diplomacy, Sofyan Fabrieta, Rasyid's colleague from another ASEAN organisation, argues:

> *Each organisation must have authority, that's principle. We talked about authority, capacity. …. Without creditability, this organisation cannot command. You need the mandate. …Effective collaboration is about exercising authority mix with diplomacy. That's how to balance meeting objective and process.*

In summary, participants demonstrated their interest in collaborating with each other but the investment of time and resources to build relationships among organisations varied significantly. In particular, government agencies had different strategies and resources in investing in building or maintaining a relationship. Their approaches were not necessarily in concert with the bigger picture of collaboration other organisations aimed to develop. The following quotes detail participants' varying attitudes, often paradoxical, toward collaboration involving government agencies:

> *…the District Officer offered us somethings... The District Officer of Kuala Krai...asked us to clean specified area. The work becomes easier if the government officials made requests for they will assign officers to facilitate our work. …We always work with penghulu* [village head] *in terms of identifying routes to access to kampungs; I asked penghulu, how much money do you need us to distribute, but first, I need to verify the fact. ….If there is a* [nationwide] *disaster management committee that consists of many stakeholders, I hope we are not instructed to do this and not allowed to do that. That's my fear* (Lim Chiang Hock, operational participant from a major local NGO)

Government is doing their job, to send ...their mobile team to various evacuation centres, but they also need our support. So, most of the NGOs have their own medical teams but it has to be....support the Government's 24 hours service ...We have attending the coordination meeting with ..... This is a good means that is happening after NADMA is formed. It's good. The only thing is still many things need to be improved. What are the terms of reference for that coordination role [involved government agencies]? (Senin Awang, operational participant from a major local NGO)

Figure 5.1 shows the interconnectedness between key partners and illustrates the relationships between the investment of time and resources by organisations in building or sustaining a relationship and the actual level of collaboration during a disaster response. The figure illustrates that the relationship investment between partners is mismatched with the collaboration or effectiveness anticipated in a disaster response. For instance, NADMA and ASEAN organisations have invested in a strong relationship between them but their collaboration is not conducive to a disaster response. Conversely, NADMA and major local NGOs have a moderately strong relationship; the support and relief operations of the NGOs can critically complement the strengths of NADMA in a disaster response. As a result, the attitude of organisations or their leaders towards managing stakeholder relationships influences decision making and the ability of an organisation to decide who to collaborate with, and how collaboration is to be managed in an effective disaster response.
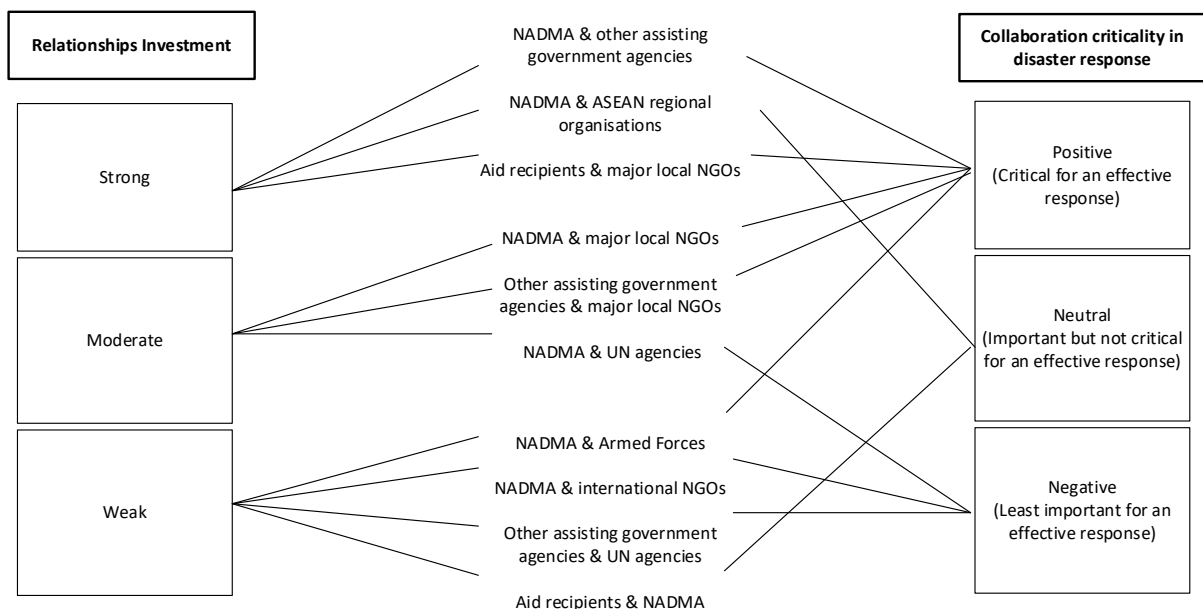
Figure 5-1: The relationship investment and degree of collaboration during a disaster response

5.5.2. *Orientation on building organisational capacity*

Leaders of disaster management organisations have differing beliefs, expectations and preferences on what tasks they should focus on and whom to collaborate with, to strengthen organisational capacity in preparing for future disasters. The training and development programme, including preparatory measures that were deemed critical to one organisation may be regarded as trivial by other organisations. The gaps in understanding, prioritisation and practices of what constitutes important training and programme development, complicate the identification of appropriate like-minded collaborative partners to achieve collective goals in capacity building, at least during the pre-disaster phase. As a result, variations in the design and practice of important capacity building programmes distanced organisations from collaborating with each other before the onset of a disaster. In failing to develop collaboration before disasters, a relatively stable situation, organisations may miss the opportunity to build relationships critical in disasters.

In general, public organisations' capacity building programmes comprise both technical (i.e., drill and inter-agency coordination meetings) and non-technical (i.e., awareness and volunteerism campaigns) components. The current trend in capacity building among public organisations dealing with disasters is technical-driven rather than non-technical. Participants argue that understanding the reasons, priorities and focus of the key training programmes of individual organisations is important because the reasons resemble the attitudes and capacity of the organisations to develop collaboration in an emergency.

Unbalanced capacity building towards the technical or non-technical, strategic or operational aspects will affect organisations' collaborative options, according to the participants from NADMA, assisting government agencies and NGOs. For instance, Georgia, from an international NGO, said her organisation's preparatory work is more inclined to disaster management law and policy as she claims:

> *we started programme [by] looking at legal preparedness for international disaster assistance. … More recently, we started to look at risk reduction law, and how to strengthen law and policy for disaster risk reduction. We also looking at legal and policy issues related to housing, land, property right in disaster. We have technical expertise in these three main areas.*

On the other hand, Zain Ahmad, a strategic participant from NADMA, explained that early coordination among key government actors, stockpiling necessary relief items and equipment within the budget are major preparatory work from the government's perceptive. The disparities in training and capacity development programmes left little room for international

NGOs and NADMA to forge meaningful relationships not only during the pre-disaster phase but also post-disaster when inter-organisational collaboration is urgently needed. Most participants agree on the importance of having continuous non-specific training for staff, and early talks on cooperation and proactive engagement in relation to training with other stakeholders who may add value to the capacity building. For instance, NADMA's strategic officials, Abdul Rahman and Zain Ahmad, stressed the drills or disaster response simulation exercises, and intra-government agency coordination. They claim that such work is critical to forge an early proactive engagement among partners.

Fahruddin Iskandar, an operational participant from NADMA, welcomed the initiative to strengthen organisational capacity building through joint-efforts with other organisations. Iskandar contended that: "*work together with other organisations* [as the event of joint-training] *exposed* [them] *to their mechanism.... it opens lots of window opportunities ...to increase their capacity*". Operational participants from NADMA and assisting government agencies agree on the importance of capacity building and emphasise the availability of a backup plan, assigning the right people to the right job, coherent intra- and inter-organisational communication systems for near real-time information sharing, and avoiding a culture of working in silos. Similarly, Che Singh, a strategic and operational staff member from an assisting government agency, stressed the importance of cultivating public awareness of disaster preparedness and a focus on building the capability of rural communities against disasters.

From the UN perspective, capacity building is its strength. As suggested by Benedict, a senior participant from a UN specialised agency, programme design, efficient implementation and best practice sharing are key training contributions that UN can share with the public authorities. Benedict maintained that a capacity building programme under the auspices of NADMA has the potential to become part of regional initiatives, particularly in disaster logistics. However, Benedict lamented that so far, "*...NADMA is very limited in training* [overall]".

Contrary to NADMA, which emphasises operational and tactical training, local NGOs emphasise the importance of training volunteers and local communities. Again, like the gap between NADMA and international NGOs as discussed earlier, the disparities between major local NGOs and NADMA in terms of training and development programmes, demotivated these organisations from collaboration in the pre-disaster phase and during the response phase

to a disaster. Thus those organisations' ability to collaborate in a disaster is adversely affected.

Although volunteer training is not a major priority of most public organisations, NADMA's strategic participant, Zain Ahmad, asserts that continued capacity building is the direction for Malaysian public agencies to achieve effective disaster management. Reflecting on his organisation's commitment to advance organisational capacity building, Ahmad contends:

> *… looking at putting our standard, tie it with the capacity of the region, through the* [ASEAN regional organisation]*. … You talk about mitigation, capacity building, knowledge [management] and innovation, though it is not coming to ask* [ASEAN regional organisation] *to do this …mitigation but it is about the knowledge. It is about the innovation that we can gather.*

Interestingly, the disaster affected population also welcomed some sort of capacity building; the people claim they can help themselves if government is willing to pre-stock equipment, such as rescue boats in a disaster-prone community. However, NADMA and other government agencies do not agree with this idea and suggest promoting flood risk awareness among rural communities. The differing views on capacity building among disaster stakeholders further complicates post-disaster collaboration.

5.5.3. *Learning from previous experience*

Organisations and individuals can best experience mutual learning through interactions in a volatile operating environment such as a post-disaster aftermath (Thompson, 2012). This study reveals that lessons learned could include a post-action review or retrospective on the approaches to handling an event; learning refers to the intentional practice of acquiring information, reflecting on it and sharing the new findings within an organisation to improve the organisation's performance (Milway & Saxton, 2011). However, the capability gap of learning from previous experience between organisations and transferring new knowledge into actions is wide, particularly between public managers and international organisations but also between disaster aid givers and recipients.

The study's findings show that participants were exposed to multiple opportunities for mutual learning through different levels of interaction and collaboration. Some participants were proactive learners and others were passive learners. A major local NGO is an example of a proactive learner in preparing for a future disaster response. Haron Addin, an experienced operational disaster manager, illustrated his organisation's proactiveness:

We have score card, we have detailed assessment. Upon finishing all programmes, we usually comes out with a local disaster action plan, like a small blueprint to help local communities in terms of evacuating, what to prepare, etc...So, not to say it is good thing but when a disaster hit the same area again, there is an opportunity to bring us to deeper re-assessing on what have been done, create new knowledge.

Public disaster management organisations, on the other hand, show examples of passive learning, e.g., Fakhrul Mansor, a senior operational staff member from an assisting government agency, claims that although he had learned from an ASEAN organisation a post-disaster damage assessment technique deemed critical in disaster response and recovery, there was no sign that the Malaysian disaster management authorities would put the measure into practice. Similarly, NADMA demonstrated a passive attitude in not addressing a known deficiency in coordinating a disaster response. NADMA's predecessor experienced an ineffective disaster response during the 2014 mega-flooding that saw an influx of uncoordinated local NGOs and weak coordination among responding government agencies. NADMA has yet to resolve this limitation through a long-term, system-wide solution according to major local NGOs. In response, NADMA's Abdul Rahman, a senior strategic leader in disaster management, contended that the 2014 uncoordinated official disaster response was a result of the complacency of key stakeholders:

…[the state] *complacency, that is something normal ...they did not expect that magnitude, but the whole nation saw for the first time the devastation that happened in Kelantan and how it impacted the society on the economic, people, until the whole society... they are willing now to ...more receptive.*

Rahman and his colleague, Zain Ahmad, affirm that NADMA has taken measures to assign personnel and resources to coordinate with NGOs before disasters and has strengthened engagement with key stakeholders. In addition, to improved disaster response technical capacity, NADMA engaged international organisations to strengthen its skills in search and rescue. Malaysia has become a member of the International Search and Rescue Advisory Group (INSARAG) with NADMA as its national focal point. However, the major local NGOs believed that weak coordination persists in responding to disasters. For instance, Sivaragam Jaya, a senior strategic leader from a major local NGO, argued that: "*same thing* [referring to the overwhelmed disaster response occurred in 2014] *will repeat, there is no change. ...Though we have a captain",* and the captain that Sivaragam mentions is NADMA. His view resonated with Yusri Salahuddin, a strategic and operational official from another assisting government agency, who is far from optimistic that public managers, in general, are prepared for and capable of leading in the foreseeable future a coordinated response consisting of multiple stakeholders.

One area of agreement among most stakeholders was the desire to learn best practice from other countries. Fahruddin Iskandar, a member of an assisting government agency, suggests learning from Philippine and Indonesian NGOs on "*disaster risk reduction (DRR), community-based disaster management programme, ... because we can learn a lots from them especially in preparing the ...society*". Che Singh, a strategic leader from an assisting government agency, suggests the need to learn from Japan on how "*to educate general public*" and study the "*good alert system*" in Singapore. However, no evidence was found that overseas best practice had been internalised into the local action plan.

When asked what were the major lessons learned in previous flood response experience, only one of 10 participants interviewed from assisting government agencies stressed the importance of a comprehensive disaster law; the other nine participants emphasised the urgent need for effective coordination and operational execution. On the other hand, five of six participants from a UN agency, international NGOs and ASEAN organisations emphasised strategic measures to improve the existing disaster management legal framework over operational concerns as a means to prepare for an effective disaster response. They urge the national disaster management organisation to be more open to learning from global best practice. Unlike the public managers who focussed on lessons learned in coordination and response efficiency, participants from these international organisations focus on matters related to established disaster management law, the disaster management organisation's legitimate authority, strategic planning and innovation in disaster response. Daniel Rasyid, from an ASEAN organisation, suggests NADMA learn from its in-country disaster management experience with a focus on strengthening the mandate and authority. He argues that: "*the clarity of disaster laws is important because only the law will provide leadership in crisis management*".

Aid recipients and aid givers had different perceptions of the lessons learned. Learning from the previous flood evacuation, aid recipients emphasise community preparedness and the effectiveness of public managers in responding to a disaster. Conversely, learning from the previous flood response, aid givers and public authorities such as NADMA had since 2016 focused on compliance with standard operating procedures, drills, simulation exercises and coordination with other line agencies for the benefit of overall function and coordination.

Aid recipients believe it is the sole responsibility of the government to respond to a natural disaster whereas public managers perceived aid recipients hardly developed an awareness to self-help before the arrival of government aid. Gaps remain between how well public managers believe what they learned from experience and aid recipients' perception of the role public

managers should play in disasters. These gaps hinder mutual learning for both parties to prepare for an effective disaster response.

Notwithstanding the differing perceptions and preferences on learning from experience, the vast majority of participants generally accept conducting simulation exercises or drills to test or improve the existing guidelines. For example, participants from NADMA, another assisting government agency, and an international NGO, emphasised the importance of thorough learning from events that had happened, through learning seminars, inter-disciplinary learning teams, conducting simulation exercises, enhancing capacity, and learning from others' experience, including foreign countries with relevant experience in responding to a mega-scale disaster. In so doing, NADMA may accelerate its learning through active participation in the ASEAN disaster management mechanism, not only to sharpen its current technical capability but also to expose NADMA to advanced disaster management in accordance with international standards. Fahruddin Iskandar, an NADMA operational staff member, appreciated the opportunity to work together with other organisations as a form of mutual-learning especially when: "*no single agency can single-handedly respond to the disasters*".

However, in practice, as I observed, not all information collected after a disaster response is transformed into new knowledge aimed at sharing individually or collectively, within or across organisations, to improve the organisation's performance. Learning and the attitude toward learning are varied among the organisations and there are gaps in transforming lessons learnt into practice. The inability of the leading public agencies to integrate mutual learning as an organisational culture, and internalising lessons learnt into a practical plan, hinder organisations from collaborating in a disaster.

5.6. A summary of the three themes

Detailed analysis of data led to the discovery of three themes that pose barriers to cross-sector collaboration in disasters. Table 5.3 summarises the findings presented on the three themes: a) perceived organisational status and hierarchy; b) different levels of motivation to collaborate; and c) organisation lacks of ability to collaborate in disasters. These three themes shed light on the barriers to cross-sector collaboration in a disaster. Organisations that overlook, lack knowledge of, or are unable to address these themes or challenges are unlikely to be able to undertake meaningful cross-sector collaboration as a strategy to resolve the problems of a disaster aftermath.

Table 5-3: *A summary of the themes identified from the focused codes*

Focused Codes	Overview of Focused Codes	Themes
Attitude to disaster leadership Tensions between central and state stakeholders	Analysis of different levels of open and focused codes delineates how an organisation positions itself in a volatile environment; how other collaborating partners evaluate an organisation based on respective beliefs, values, and expectations in terms of leadership, mandate, and planning for preparatory actions; how conflicting demands and contradictory perspectives may be reconciled.	Status: Perceived organisational status and hierarchy
Level of trust among actors Unclear organisational roles and legitimacy	Analysis of different levels of open and focused codes illustrates how general perceptions between organisations, expectations of mutual reciprocity, actions (or inactions) of stakeholders, cultural differences, attitudes toward achieving organisation goals, unclear organisational roles and legitimacy were interpreted differently by stakeholders.	Motivation: Different levels of motivation to collaborate
Attitude to managing stakeholder relationships Orientation on building organisational capacity Leaning from experience and lessons learned	Analysis of different levels of open and focused codes outlines how organisations' different strategies, priorities and objectives in relationship management, attitude towards organisational capacity building, lessons learnt and learning from past experience influences an organisation's ability to collaborate.	Ability: Organisation lacks of ability to collaborate in disasters

The first theme, "perceived organisational status and hierarchy', refers to the role status and hierarchy play in hindering collaboration. How collaborating partners evaluate an organisation based on respective beliefs, values and attitudes are critical to the promotion and development of collaboration. The conflicting demands and opposing perspectives of major stakeholders particularly on leadership, mandate and political influence, may be reconciled to a common objective to prepare for future disaster responses.

The second theme, "different levels of motivation to collaborate", demonstrates how the perceptions between organisations, the expectations of mutual reciprocity, the actions (or inactions) of stakeholders, cultural differences, attitudes toward achieving organisation goals, unclear organisational roles and legitimacy that are interpreted differently by stakeholders, can hinder cross-sector collaboration in a disaster. The third theme, "organisation lacks of ability to collaborate" outlines how organisations' different strategies, priorities and objectives for relationship management, attitudes toward organisational capacity building, and learning from

experience may adversely influence the ability of an organisation to collaborate in a disaster. Next chapter discusses the study's results.

Chapter 6:
Discussion

Our ignorance is not as vast as our failure to use what we know

--- Marion King Hubbert, geologist and geophysicist, USA (1903-1989)

6.1. Introduction

The preceding data analysis chapters unpacked the findings of this study. First, I found three themes that explain the barriers to building cross-sector collaboration following natural disasters: a) perceived organisational status and hierarchy; b) different levels of motivation to collaborate; and c) organisation lacks of ability to collaborate in disasters. Despite these barriers, collaboration does occur between various stakeholders. Based on the findings, I identify four collaboration scenarios: (1) enthusiastic, (2) mandate-driven, (3) reluctant and (4) non collaboration.

This chapter first discusses the three barriers to collaboration in disaster situations. Then, four types of collaboration are identified from the partnerships, interactions or joint-activities between disaster actors which also informed the three barriers to collaboration in disasters. The disaster actors played varying roles to address the three barriers to different degrees to achieve the desired outcomes by cross-sector collaboration in disasters. The concluding chapter, Chapter 7, will present the theoretical contributions and implications of this study, and practical contributions for policy makers, academics and practitioners on cross-sector collaboration following a disaster. Chapter 7 also includes a discussion of this study's limitations, and future research.

6.2. The three barriers to cross-sector collaboration in disasters

Substantiated by data analysis in the previous two chapters, this chapter discusses the three barriers that hinder cross-sector collaboration in disasters, particularly during the disaster response phase. These barriers are: a) perceived organisational status and hierarchy, b) different levels of motivation to collaborate, and c) the organisation lacks the ability to collaborate. Stakeholders and organisations that lack knowledge of or overlook these barriers will undermine the development of joint action among disaster actors in responding to a disaster effectively and collectively. Ultimately, the intended collective results are unlikely to be achieved.

6.2.1. *First barrier: Perceived organisational status and hierarchy*

The first barrier to cross-sector collaboration in disasters is perceived organisational status and hierarchy. Varying perceptions of organisational status, including organisation's perception of their own status and that of their collaborative partners hinder collaboration in disasters. In general, public agencies regard their own status highly. They claim that international and regional organisations are keen to establish or maintain contact with them. Their status attracts the general public to donate aid generously to disaster-affected communities through government agencies that are responding to recent floods. In terms of hierarchy, government disaster responding agencies generally operate in a centrally-controlled, narrow goal context in their daily activities with minimum coordination and collaboration with other organisations (Scholtens, 2008). For example, an assisting government agency with a focus on search and rescue and another agency with a focus on management of an evacuation centre have minimal coordination and collaboration between them before a disaster. Conversely, NGOs offering disaster relief and assistance generally operate in a decentralised, cross-functional context with extra efforts to reach more volunteers, donors, media or resources. This illustrates dissimilar governmental and NGOs' perceptions on status and hierarchy leading to different collaborative directions and focus.

The perceptions of public agencies' status and hierarchy influences the level of engagement between major local NGOs, international NGOs and UN agencies, and public organisations. The varying perceptions are not conducive to the collaboration needed for an effective disaster response. For example, UN agencies argued that it is important to have a designated, institutionalised national agency with a focus on disaster management. However, UN agencies claim that national public organisations with strong sense of 'protectionism' are less incentivised to collaborate with 'foreign entities'. Any forms of collaboration involves this kind of hierarchical national agency may only lead to inconsistent, unpredictable and relationship-driven interaction and not meaningful collaboration.

Some scholars argue that hierarchical organisations with centralised command and control are more efficient in a disaster response (D. A. Alexander, 2008; Guo & Kapucu, 2015a). Other scholars refute the authoritative and strict command and control model and suggest a flexible collaborative approach as an alternative, without creating additional structures other than the pre-existing emergency authority (Dynes, 1994; Quarantelli, 1988). Some suggest a combination of both the hierarchical command and control and collaborative models is more

useful in emergencies (Moynihan, 2009; Waugh Jr & Streib, 2006). This study showed that there is an on-going tension between the command and control model and the need for collaboration in disaster situations. Not surprisingly, the barrier of organisational status and hierarchy persists as was seen in the tensions between stakeholders and the varied attitudes to disaster leadership, makes collaboration in disasters challenging.

Powerful actors may influence planned and actual networks under both the command and control and collaborative models (Demiroz & Kapucu, 2012; Kapucu, Arslan, & Demiroz, 2010). This study found that participants with strategic backgrounds from government organisations are powerful actors in disaster collaboration. Powerful actors always play a dominant role in deciding an operation's direction and with whom to collaborate. The strategic participants suggested that the command and control model is more effective but most collaborative partners, especially those with operational backgrounds, whether from government or NGOs, were sceptical about the effectiveness of the command and control model in disaster collaboration. They regarded the command and control model as a barrier to effective communication, coordination and coherent action.

Stinchcombe's (1965) term 'liability of newness', or a liability of inertia, contends that a young organisation, such as NADMA in this study, has a relatively higher fail risk than more established organisations. The newness of NADMA affected its perceived status as the nodal agency in national disaster management. Commonly, new organisations are perceived as lacking the ability to act or compete because they are not embedded appropriately compare with older organisations (Hager et al., 2004). To some extent, NADMA, as a nascent public agency with untested mandate and structural configuration, is reluctant to collaborate with external partners at least initially. Moreover, the focus of a nascent organisation is not to initiate collaboration but to stabilise its internal administration. Research on the 'liability of newness' argues that other reasons are at play to influence organisations to perform the intended tasks through collaboration. For example, political turnover and executive ambition detected in the transition of public organisations may influence collaborative arrangements (Kuipers, Yesilkagit, & Carroll, 2018). Some authors refute the 'liability of newness' and argue that the 'liability of adolescence', as uncovered in quantitative research on business organisations, plays a bigger role in giving rise to the mortality risk of new organisations (Bruderl & Schussler, 1990). Organisations' preferences for disaster management models are different and this difference in preferred working models hinders collaboration since organisations operate

according to their preferred model. There is a mismatch in operating models and though organisations might consider themselves powerful, others may not agree.

Actors who fail to understand the dynamics of organisation status and hierarchy create tensions with potential partners. The struggle to balance power between central and state stakeholders are examples of the divide between central-hierarchical and decentred-horizontal organisational status (Kenis & Provan, 2009). For instance, NADMA is concerned that its central directive is clear or that relief support to a state is adequate through communications with state officials, but the state government perceives this interaction rather differently. Its aim is to strengthen self-control of the situation and the subsequent relief operation. The notion that should be accepted is that a coordination network involving any public authorities will always have some degree of hierarchy (Hovik & Hanssen, 2015).

This study's findings suggest that the lead government disaster management agency should not necessarily limit itself with a central, hierarchical approach matching its mandated status and organisational hierarchy when exploring collaboration with external partners. During the transition to a collaborative arrangement, varying degrees of organisational status and hierarchy can be used to build, renew and maintain wide collaboration, especially during a disaster response. Only a basic level of agreement between disaster actors needs to be arranged before the onset of a disaster.

6.2.2. *Second barrier: Different levels of motivation to collaborate*

The second barrier to collaboration in disasters is that there are different levels of motivation to collaborate. Chapter 5 discussed the varying perceptions (positive, neutral and negative) between one organisation and another. A positive perception towards a potential collaborative partner motivates the partners to collaborate voluntarily whereas a negative perception of the other discourages them from collaborating.

The forces constraining an organisation from collaborating are a lack of trust towards partners (Bachmann, Gillespie, & Priem, 2015; Saab, Tapia, Maitland, Maldonado, & Tchouakeu, 2013) and challenges of striking a balance between governance capacity and governance legitimacy (T. Christensen, Andreas Danielsen, Lægreid, & Rykkja, 2016). Trust plays a pivotal role in cross-sector and inter-organisational collaboration as evidenced by extensive research (Bachmann & Zaheer, 2008; Dodgson, 1993; Meyerson, Weick, & Kramer, 1996; Morgan & Hunt, 1994; Saab et al., 2013; Samaddar, Choi, Misra, & Tatano, 2014). Trust has a strong

exchange relationship, driven by the principle of reciprocity, such that there are mutual expectations between individuals to return a favour after one has been offered something of value by the other (Bowles & Gintis, 2011; Putnam, 2002). When organisations have a low level of trust toward potential partners, they are unlikely to be motivated to collaborate because experience in dealing with organisations may influence their decisions about collaboration.

In addition to trust, the match or mismatch between governance capacity and governance legitimacy is critical to understand disaster management performance (Rothstein, 1998). Governance capacity includes the availability of formal structure, procedures, ability in coordination, and exercising power to handling disasters but also informal elements, that is, how to practise all these features effectively (T. Christensen, Lægreid, & Rykkja, 2016; Lodge & Wegrich, 2014). Legitimacy, is a complex concept, and it affects how people respond toward government agencies in disasters but also how they perceive the authorities (T. Christensen, Lægreid, et al., 2016). Nevertheless, the perceptions or relationship between government authorities and citizens are linked to how a disaster response is handled. Citizen's perceptions of whether the authorities' action in a disaster response are desirable, appropriate in accordance to certain socially accepted norms and beliefs (Jann, 2016; Suchman, 1995) matter in disaster management. When public disaster agencies' preparedness in disaster management matches the citizen's perceptions, the response process implements smoothly and governmental performance is regarded as good. When there is a mismatch between disaster response capacity and perceptions, the governmental disaster response process become problematic (T. Christensen, Lægreid, et al., 2016). The varying perceptions between disaster collaborators identified in this findings, in part, explains the importance to close the gap between the ability for governmental response and citizen's expectations for successful disaster response.

Inter-organisational trust building needs time and is unlikely to develop in disasters. The study's findings show that frequent face-to-face interactions are conducive to building trust. For example, unlike government officials who often withdraw immediately from a disaster-affected community once the official response has concluded, major local NGOs and their volunteers continued communicating, interacting and supporting disaster aid recipients for an extended period. Such frequent interactions contributed to a high level of trust between the major local NGOs, volunteers and aid recipients. This explains why, among aid recipients, uniformed national government officials were subjected to lower level of trust than the major local NGOs.

However, frequent face-to-face interaction alone is not sufficient to motivate desired collaboration. Other factors could have contributed to the outcome. In this regard, examining trust from the macro-level provides an important perspective. Institutional-based trust (Bachmann & Inkpen, 2011) deserves more attention because public agencies are the leading agencies responsible for responding to disaster aftermath problems. Contrary to interaction-based trust developed on the premise of constant face-to-face interactions between two individuals, institutional-based trust emphasises collective action building on formal and reciprocal relationships embedded in a structured and systematised environment (Bachmann & Inkpen, 2011). The first example of institutional-based trust, between NADMA and other assisting government agencies, shows signs of high-level motivation to collaborate with each other. As a member of a structured environment (i.e., the national civil service), NADMA acknowledged its limitations with a secretariat and staff present only at a central level and reliance on other public agencies and district officers to complement its role at state and district levels when a disaster strikes. The assisting government agencies rely on NADMA for central directives and additional resources. The institutional trust between them motivates inter-organisational collaboration in disasters. The second example, between NADMA and UN agencies, showed limited signs of motivation to collaborate with each other. Again, as members of a structured environment (i.e., member state and the UN system), NADMA and UN agencies are connected by a formal framework. However, the institutional trust did not effect or motivate their desirable collaboration. As a result, the UN agencies maintained that Malaysian authorities did not fully use the humanitarian emergency logistics service provided by the UN agency. Not surprisingly, NADMA is more interested in maintaining a minimal formal relationship with the UN agencies.

This study found that NADMA has a positive, stable and good reciprocal relationship with ASEAN organisations. In part, this positive relationship is built on the basis of an agreement between them but the findings suggest that it is a high level of trust that motivates both parties to collaborate in disasters. Such a high level of trust does not exist between NADMA and UN agencies or international NGOs because NADMA regards them as 'foreign' entities lacking the homogeneity of collaborative partners in terms of values and cultural perspectives, important conditions for collaboration. Conversely, disaster aid recipients may have no cultural differences with public managers, such as NADMA officials, but they still failed to develop the desired level of trust important for collaboration in disasters. It is perhaps dissimilar values that discouraged aid recipients from collaborating with NADMA. Aid recipients generally

ignore the authority's advice and prefer to take on the risk of continuing to live in flood-prone villages; NADMA claimed its pre-disaster preparation and post-disaster relief efforts were negatively affected by the different mindset and attitude of aid recipients.

The findings revealed that most disaster stakeholders practised a cluster approach (Altay & Pal, 2014; OCHA, 2019) in disaster management and did not abide by a comprehensive model with emphasis on all the phases of disaster management beginning with preparedness (prevention), mitigation to the response and recovery phases (Khan, Khan, & Vasilescu, 2008). When disaster actors (e.g., other assisting government agencies) focus only on saving lives, protecting property, and disseminating relief items during the disaster response phase and pay little attention to the preparedness or mitigation phases, it implies that they are practising cluster approach in disaster management. A relatively small number of disaster stakeholders (e.g., major local NGOs) pay attention to the disaster response phase as well as the other phases of disaster management. Major local NGOs who practise the comprehensive or integrated disaster management model, or total disaster management, as they claimed, are less motivated to collaborate with other organisations that prefer the cluster approach and see disaster response as a one-off activity in managing disasters.

Hermansson's (2016) study in Turkey shows that politics and bureaucracies strongly influence cross-sector and inter-organisational collaboration in disaster management. In general, different political ideologies influenced decision makers (Heywood, 2017) within government and NGOs. This study showed that political and bureaucratic factors exist between organisations and they influenced organisations' motivation to collaborate. For instance, the visit of an important politician to a disaster area was arranged at the expense of suspending relief work temporarily, meaning potential collaboration between government agencies and other partners might have been disrupted. Decision-makers who followed a particular political ideology declined to collaborate or accept the assistance offered by partners from another political camp.

Bureaucracy's influence was detected in the study; it discouraged collaboration in disasters. For example, several study participants recollected the lack of a legal framework such as the absence of disaster management law that would allow the Malaysian government to declare a state of emergency in the event of major natural disasters. As a result, disaster management agencies found it difficult to mobilise resources from other ministries, agencies or the private sector, for the urgent use in rescue, relief and response. Formal authority has little influence in

motivating collaboration between organisations to achieve the desired outcomes because political and bureaucratic factors are at play. This study found that, for government agencies, motivation to collaborate was driven by their respective commitment to and understanding of disaster management and political practice. For NGOs, additional motivational factors to collaborate with other parties during disasters were driven by the respective organisation's thoughts, beliefs and intended outcomes.

6.2.3. *Third barrier: Lack of ability to collaborate*

The third barrier is the lack of organisational ability to collaborate in disasters. An organisation may be capable of collaborating with other partners during routine, non-emergency phases but this does not imply that it is equally capable of collaborating in a disaster. It is widely recognised that outside relationships help organisations become innovative and learn new competencies (Chesbrough, 2006; Nooteboom, 2008), which are instrumental for knowledge transfer (Cropper & Palmer, 2008; Lewin, Weigely, & Emery, 2004). This study found that learning, more than a desire for innovation, is the key motivation bringing organisations into collaboration. Organisational learning theory is relevant here. Learning theory explains "how individuals and their organisations acquire, process, distribute, integrate, and dissipate information associated with the functions of the firm" (Lewin et al., 2004, p. 114). Nooteboom (2008) studied all possible factors influencing learning and innovation through cross-sector and inter-organisational relationships and summarised *competence* and *governance* as two central loci. Competence is the ability to develop new competencies or skills and governance is about the art of managing relational risks (Nooteboom, 2004, 2008). Compared with government organisations, private organisations (e.g., high-technology firms) are driven by increasingly competitive business environments, are more motivated to acquire new knowledge or skills outside their sphere of expertise by means of collaboration with other partners (Chesbrough, 2006; Powell et al., 1996; Yami & Nemeh, 2014). However, it is not clear if public organisations responsible for disaster management have a similar attitude towards learning as seen in private organisations.

The study's findings show that relational learning is not the sole driver in two organisations collaborating. For instance, participants from an international NGO claimed that NADMA was not as keen as it was to explore technical cooperation for the development of a national disaster management law that they believed critical for an integrated disaster response. NADMA understands that collaboration between them is for mutual learning benefit but the expected

collaboration still did not happen. This situation resembles Nooteboom's (2008) argument that learning relationships change when a partner sets boundaries to shared knowledge within the collaborative engagement. In this case, NADMA decided to minimise allegiance with the international NGO it deemed as a foreign entity to uphold organisational governance and balance the political distance. The trade-off was the opportunity to learn the technicalities of disaster management law. When collaboration is deemed desirable in disasters but it does not happen signifies certain degrees of an organisation's incompetency to collaborate with others.

Some learning opportunities benefit only an individual partner whereas other learning benefits all collaborative partners collectively (Khanna, Gulati, & Nohria, 2000). Learning opportunities that benefit both the individual and organisation, particularly during disasters, are not common. To acquire knowledge or innovation, outside relationships are needed. The density of ties favours the functioning of social norms and control, networking and reputation mechanisms that are conducive to good governance (Coleman, 1988). However, an increase of tie density may open up more avenues for spill-over risks (Nooteboom, 2004, 2008), and constraints on network ties may curb the variety of information and innovation sources (Nooteboom, 2004). The findings showed that partners find it challenging to maintain a balance between flexibility of expanding relations (i.e., increase tie density) and exclusiveness of membership (i.e., limited tie density).

This study shows three reasons why it is challenging for a public organisation like NADMA to initiate a cross-sector collaboration in disasters. First, the organisation is newly established and has to attend to other pressing issues including acquiring resources to ensure its survival. Second, government officials claimed that foreign partners are inept at handling civil service bureaucracy, local customs and cultural sensitivities. Third, the concepts of change, dynamics and temporality in cross-sector and inter-organisational relationships are not yet fully understood and established (Cropper & Palmer, 2008; Harvey, Griffith, & Novicevic, 2000). Change refers to variations over time in continued survival, memberships and the constitution of cross-sector collaboration. Dynamics refers to the pattern of change over time and the forces that create that change (Cropper & Palmer, 2008). Temporality is refers to the timing, timeframe and time patterns in cross-sector and inter-organisational relationships (Cropper & Palmer, 2008; Harvey et al., 2000). If nascent organisations are unable to convene an intended collaboration involving new partners in the pre-disaster phase, such as a jointly designed simulation exercise or technical workshop, it is even more challenging for them to promote cross-sector collaboration in disasters where the 'unpredictability' level is even higher.

To some extent, participants with similar backgrounds (i.e., both are from the government domain), and cognitive proximity (i.e., both organisations largely share the same interpretation, perceptions, sense making and value judgements) are beneficial for collaboration (Biermann, 2008; Nooteboom, 2008). Evans et al. (2011) in their collaborative study, found that homophily, the norm to work with partners of similar specialties, social status or geographic proximity, have become pertinent features in cross-sector collaboration. That study also found that homophily plays an important role in promoting collaboration in disaster settings as seen in the partnership between NADMA and other assisting government agencies. A certain degree of homogeneity among collaborative partners is conducive to maintaining stability, building trust and advancing the intended interactive learning experience (Nooteboom, 2008). However, organisations have to make trade-offs; too much homogeneity in membership can decrease the variety of sources needed for innovation and learning, whereas too much heterogeneity can create mistrust and tension or a conflict of interest. Hence, collaborative partners who have learned the lessons about managing stakeholder relationships will look for optimal instead of maximum flexibility in choosing membership. A lack of explicit processes to do so in learning between organisations and managers has led to the third barrier that hinders organisations' overall ability to collaborate in disasters.

In summary, this study showed that stakeholders who have forged a high degree of trust in past joint-experiences in pre-disaster technical training or in responding to disasters can collaborate in new disaster situation. However, if without the high degree of trust built in the past joint-up activities, despite how objective or apt a leader may be to deliberately design a coordination structure or invested in managing formal relationship among partners, public agencies may not necessarily capable to promote desired disaster collaboration. Scholtens's (2008) study of centrally controlled collaboration during an acute phase in the Netherlands uncovered the importance that multi-stakeholder collaboration in a disaster is not *underestimated*, but is in fact *overestimated*. Instead, more attention should be paid during the preparatory phase where controlled collaboration is practised. What organisations did and with whom they interacted during the preparatory phase is instrumental in promoting cross-sector collaboration when a disaster strikes. This study's findings discovered that overestimation of an organisation's ability and the belief that cross-sector collaboration in disaster settings can be attained naturally or eventually by means of organisation status and hierarchy (e.g., presence of a 'focal' organisation, legitimate position and formal authority of other organisations), a high level of motivation (e.g., exercise a deliberately designed coordination among partners), and ability to

learn (e.g., practise what the organisation learned in previous disaster responses) in the acute phase of a disaster, may actually hinder collaboration.

6.3. The four types of collaboration

The previous sections focused on the barriers to collaboration but there were various forms of collaboration that took place among the stakeholders. Four types of collaborative activity were uncovered from the findings based on two factors: (a) motivations to collaborate in disasters; and (b) perceptions of the one's own or other's ability to collaborate.

Figure 6.1 summarises collaboration typology and this is followed by a detailed discussion of each type of collaboration. Appendix 6A shows examples of practical collaboration or non-collaboration involves four types of collaborators.

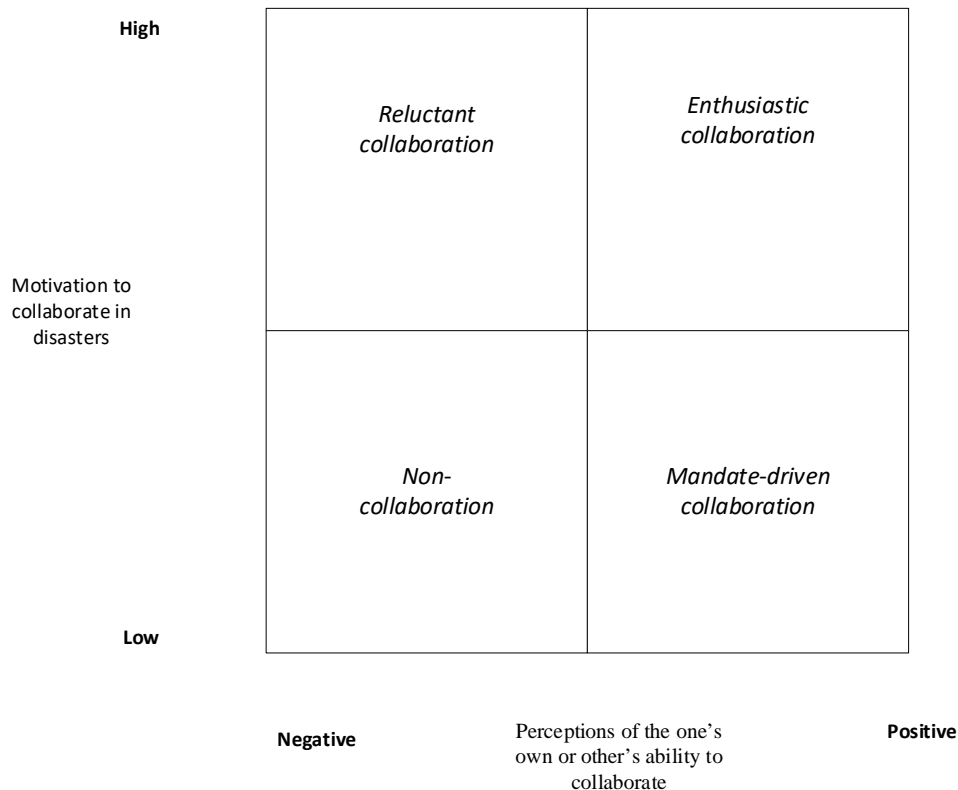|		
High	*Reluctant collaboration*	*Enthusiastic collaboration*
Motivation to collaborate in disasters	*Non-collaboration*	*Mandate-driven collaboration*
Low		
	Negative	Perceptions of the one's own or other's ability to collaborate	**Positive**

Figure 6-1: The four types of cross-sector collaboration in disasters

Enthusiastic collaboration

This study showed that this type of collaboration happened between NADMA and other assisting government agencies as well as between NADMA and ASEAN organisations. This kind of collaboration is high level and occurs when an organisation's desire to develop a new

139

or advance an existing inter-organisational collaboration is high, and collaborative partners have positive perceptions of the collaborating partner's ability to deliver the desired result. To some extent, a binding agreement may function as a major driving force to advance collaboration but still the desired collaboration did not always happen because of the existence of a pre-agreed regulatory framework. This study shows that a high desire for collaboration and a positive perception of the collaborating partner's ability are precursors in the development of collaboration in a disaster.

Nine of the 30 interviewed participants are categorised as participants who are keen to promote enthusiastic collaboration. The common characteristics of this group include being open to sharing both positive and negative experiences, acknowledging current organisational limitations, expressing interest in learning from or working with partners or countries that have more experience or are better equipped, and taking initiatives to suggest countermeasures to improve current mechanisms or procedures. The nine made further suggestions, reflecting on their experiences and being willing to elaborate their insights into a particular collaboration. In this group, the driving factors for one individual to collaborate with another is that it is highly voluntarily, interdependent, without the pressure of rules or agreements (although honouring institutional arrangements are instrumental to initiating and deepening collaboration) and, in good faith, aim to achieve both individual and common objectives.

NADMA and other assisting government agencies provide an example of enthusiastic collaboration. NADMA is committed to take responsibility for building trust and a network with other assisting government agencies, including the first responding agencies (e.g., Police, Fire Department). However, it is not committed to international NGOs and aid recipients. NADMA extended an invitation to other assisting government agencies it deemed important in disaster response to participate in disaster relief simulation exercises, familiarisation workshops and informal dialogue to strengthen inter-agency communication and *espirit de corps*. NADMA acknowledged that without full cooperation from these peer agencies, it is almost impossible for the relatively resource-limited NADMA to perform its task as the national coordinating focal point of disaster management. On the other hand, as informed by the study's findings, most assisting government agencies have a positive perception of NADMA's ability to perform its mandated role through collaboration. Such positive opinions of collaborative partners towards NADMA's ability to collaborate is crucial to forging enthusiastic collaboration.

NADMA and ASEAN organisations demonstrated another example of enthusiastic collaboration. For example, NADMA voluntarily despatched its staff to participate in a capacity building programme initiated by ASEAN bodies despite a high employee shortage and turnover rate. On the other hand, ASEAN organisations highly commended the efforts of NADMA and involved NADMA in all major decision making processes related to regional disaster management. There were times when representatives from the ASEAN organisations were allowed by NADMA's strategic participants to jointly respond to major local flood relief operations while no other regional or international organisations were permitted. This reflected the high degree of trust by NADMA towards the ASEAN organisations. Operational participants from NADMA and other assisting government agencies were also highly motivated to learn 'best practice' in disaster management through participating in training programmes conducted by the ASEAN organisations and the ASEAN organisations welcomed it with open arms. Malaysian government disaster management agencies and ASEAN organisations may be connected by an agreement on disaster management, but mandated compliance alone is not the driver of collaboration between them; it is the high level of mutual reciprocity not detected between other participants. To some extent, it is the commitment to attain a common goal that goes beyond individual and group self-interest that Hickman (2004) termed "*invisible leadership*" (p.751) that counts.

Mandate-driven collaboration

Mandate-driven collaboration was identified when a leading collaborating partner has a low desire to volunteer for collaboration in disasters whereas other collaborating partners are positive about their respective abilities to collaborate. Mandate-driven collaboration can only lead to a *moderate* level of collaboration. Examples of mandate-driven collaboration happened between NADMA and UN agencies and between NADMA and international NGOs.

Data analysis found that the nine participants categorised as a group interested in promoting mandate-driven collaboration. Like the enthusiastic collaborators, these participants were determined to work voluntarily with other social entities. However, the prevalent desire for collaboration is driven, shaped and governed by conforming to existing legal frameworks, rules or specific norms that are inherent in participating organisations. This group of participants placed developing and maintaining formal collaboration above flexibility and innovation in responding to disasters. Other common characteristics included setting priorities to fulfil the spirit of an agreement or mechanism, and advancing planned collaborative activities that

sometimes were politically driven, are seen as exercising authority to stay relevant. Such collaboration is less flexible and is governed by shared rules and structure.

Mandate-driven collaboration has one distinctive difference from enthusiastic collaboration in terms of partners. Partners in an enthusiastic collaboration are generally willing to work with any competent, interested actors for mutual good. However, participants in mandate-driven collaboration are comparatively selective and much less flexible in their choice of partners. They prefer to work with formal, familiar organisations with their background officially vetted, and operate in a highly regulated environment. Constrained by such limitations, mandate-driven collaborators attract a *moderate* level of collaboration since only entities sharing the same ideals about a particular framework are likely to collaborate.

An example of mandate-driven collaboration is in the partnerships between NADMA and UN agencies based in Malaysia. Even though Malaysia hosted several UN agencies with physical offices in Malaysia, under the auspices of the UN and Member State framework, the partnerships between NADMA and the UN agencies are emphasised in protocols and formal settings. NADMA, as the focal point of national disaster management, showed a low desire to forge a partnership with the UN agencies. Conversely, the UN agencies believed that they have policy and technical best practice to share with NADMA. Another example is in the collaboration of NADMA and international NGOs. NADMA showed less desire to forge collaboration with international NGOs, which it regards as foreign entities. NADMA is highly selective and cautious in membership selection, collaborative design and protocols when attempting to work with foreign organisations. Conversely, international NGOs argued that their technical knowledge and hands-on experience in disaster management and humanitarian assistance are useful to NADMA, which was new. If participation of a non-familiar member is required in a mandate-driven collaboration based on technical, governance or funding considerations, the blessing of political leaders is important, and often on a case-by-case basis.

Reluctant collaboration

The collaborative arrangement between NADMA and major local NGOs and between government authorities represented by NADMA and disaster aid recipients, are examples of reluctant collaboration. Reluctant collaboration happened unwillingly when one party (e.g., NADMA) may have high desire to advance cross-sector collaboration in a disaster but another party (e.g., a major local NGO) rather negatively perceived the collaborative partner's ability

to develop significant collaboration in particular timeframe. This means that reluctant collaboration leads to only a low-level of collaboration.

Another nine participants fit the group that leading to reluctant collaboration. Collaborators in this category shared some characteristics with the mandate-driven collaborators in terms of careful selection of membership and awareness of their strengths and limitations. Often, if any form of reluctant collaboration occurs, the partnership is unwillingly rather than fervently welcoming. The availability of other partners capable of augmenting strengths impacts little to facilitate a new collaboration between reluctant collaborators. At times, participants in a reluctant collaboration are passive and are inclined to focus on self-defined, emergent coordination activities (Okhuysen & Bechky, 2009), or they may primarily emphasise the process of collaborative arrangements rather than achieving intended collective outcomes in a rapidly changing environment (Faraj & Xiao, 2006; Kellogg, Orlikowski, & Yates, 2006; Majchrzak et al., 2012). At no time, do members of reluctant collaboration exert power and control; they show little tolerance of others' sub-standard performance and are very unlikely to become a cooperative and committed member in any collaborative initiatives. These reluctant collaborators declined to collaborate when conditions were not favourable to them and did not accept collaboration when the situation was inevitable.

The collaboration between NADMA and major local NGOs is an example of reluctant collaboration. On the one hand, NADMA counted on major local NGOs to provide extended relief support to disaster-affected communities (e.g., building temporary housing and supporting the livelihood of aid recipients for over a year). On the other hand, it also intended to regulate and monitor the movement of NGOs as part of a command and control model. Major local NGOs are interested in collaborating with government agencies or local government officials who can provide them with local information or facilitate interactions with local communities but always consciously remained distant from government bureaucracy for fear of losing control and coordination of their own relief operations. Major local NGOs often negatively perceived the ability of NADMA and other assisting government agencies to collaborate effectively in a disaster.

Another example of reluctant collaboration was evident between the authorities represented by NADMA and disaster aid recipients. NADMA has a high desire to provide necessary relief to aid recipients by collaborating with multiple disaster actors from within and without government systems. However, aid recipients have negative perceptions about the ability of

NADMA to deliver the intended relief. Instead of working alongside the authority in building a resilient local community against frequent floods, the aid recipients believed it is chiefly the government's responsibility to continue providing pre- and post-disaster assistance. The authority claimed that they have an attitude problem. The expected cooperation between the authority and aid recipients did not happen before, during or after disasters. Although the authorities stand ready to save lives and protect property, collaboration between the authorities and aid recipients, particularly the rural population that lives in flood-prone areas, remained low level. If reluctant collaboration occurs, albeit involuntarily, one partner will seek more power than the other to influence important decisions can be made in favour of the organisation's interest rather than the collective one.

Non- collaboration

Non-collaboration happens when an organisation has a low desire to advance collaboration and, at the same time, the potential collaborating organisation perceives that the other party lacks the ability to collaborate. As a result, the potential for collaboration is missed and, if collaboration has already commenced, it will likely be thwarted and not be sustained. This study uncovered non-collaboration between two major local NGOs. Local NGOs already aware of the many advantages they may gain through collaboration between them. For examples, an oversupplied volunteers of a NGO can be re-mobilised to complement the relief distribution work of another NGO that has a relatively smaller number of volunteers. By working together, both local NGOs can jointly distributing reliefs to more geographically-challenged communities. However, any potential collaboration is missed.

Three of the 30 participants, from major local NGOs, explicitly expressed that they did not see the value and advantage of working with other partners in disasters. These participants avoided all forms of collaboration and preferred to act alone with their own resources. The participants who preferred to avoid collaboration were the fewest compared with the other three types of collaboration. These non-collaborators may be small in number, but an effective, coordinated disaster response operation counts on the inclusive participation of all possible stakeholders. If an avoiding partner is a resource-rich, experienced actor in disaster management, the absence of such collaborator compromises the effectiveness of the overall effort.

The small number of the non-collaborators is consistent with the data analysis that the vast majority of participants preferred to resolve complex public problems by collaboration. Non-collaborators share the common characteristics of avoiding the loss of autonomy, minimising

influence or control by other organisations that are inherently dominating institutions by law or norms, or those who are more established and experienced than itself. Non-collaboration is commonly detected among established faith-based NGOs with particular beliefs, values and norms that potential collaborative partners find difficult to comprehend be compliant with or practise in tandem.

The findings show that non-collaboration was detected between resource-rich major local NGOs. They saw no reason to collaborate among themselves voluntarily because they claimed that the other parties were either short-term, inexperienced, or of different technical specialities, organisational values and principles. Disparities of perception, capacity and trust between organisations hindered these local NGOs from collaborating with each other. Non-collaboration mainly happened among resource-rich organisations but was also detected among NGOs with limited resources, expertise or spontaneously formed to support the people in disasters. These non-collaborators tried to work alone in the field with their own resources as guided by their beliefs. For them, operating in a larger social system and in the shadow of a dominant partner either from the government or non-government domains, or being a collaborative partner in an unknown social system is the last resort. If a participant who preferred non-collaboration teams up with any specific social actor in a disaster, it is only because "the law said so"; the collaboration is hardly voluntary.

6.4. Why collaboration is important in disaster management

The three barriers to cross-sector collaboration and four types of collaboration in disasters identified in the findings affirm the complexity of collaboration in disasters. Collaborative processes are of a multi-complex nature (Thomson & Perry, 2006) akin to a "black box" (Wood & Gray, 1991) because they are intertwined with dimensions of governance, administration, organisational autonomy, mutuality, and norms (Thomson & Perry, 2006; Wood & Gray, 1991). This study presents the potential consequences if leading Malaysian government agencies responsible for disaster management fail to take appropriate measures to promote collaboration in disasters. The consequences are twofold: First, the organisations failed to yield the desired outcomes that ensue in a disaster. Second, organisations failed to use collaboration to manage the disaster response.

6.4.1. *Failure to achieve the desired outcomes through cross-sector collaboration*

The findings show that NADMA and its partners agreed that, apart from meeting individual organisational goals, there are some desired outcomes in responding to a disaster that are achievable only through collaboration. However, disaster actors will not be able to deliver the desired outcomes if they are not aware of, have knowledge about, and have the skills to address the collaboration barriers: perceived organisational status and hierarchy, different motivation levels and lack of ability to collaborate in disasters, and the four collaboration types.

NADMA, from the perspective of the organisation, aims to achieve strategic and operational purposes. From the perspective of collective action, NADMA has other desirable goals that can be achieved only through collaboration with other actors. NADMA's strategic purpose is to perform as the mandated authority, effectively the nodal central agency in disaster management and its operational purpose is to provide clear directives and facilitate coordination across policies and jurisdictions. NADMA has additional desired goals, *inter alia*, to address the challenges of existing technical shortcomings, anticipate gaps in pre-disaster preparedness and actual disaster response, accelerate disaster relief operations, and reduce tensions between stakeholders, policies and across jurisdictions. For instance, to achieve the desired goal of accelerating a disaster relief operation, NADMA is motivated to collaborate with major local NGOs. NADMA welcomes these NGOs to complement its disaster relief operation or even to coordinate other unregistered NGOs on behalf of the authority. However, major local NGOs are concerned about losing organisational discretion and there is no legal mandate for them to coordinate the activities of counterparts. The findings showed that, between NADMA and major local NGOs, there is only reluctant collaboration because of the three barriers identified in the study. Without knowledge of the barriers to cross-sector collaboration and the four types of collaboration, NADMA faces challenges in achieving organisational strategic and operational purposes. The effort to achieve the desired goals through collaboration becomes more challenging in a disrupted environment.

Skill in managing the dynamics of commensal and symbiotic relationships (Bouncken & Fredrich, 2016; Bouncken & Kraus, 2013; Buuren, Buijs, & Teisman, 2010; Tsai, 2002) influenced organisations to align between their strategic and operational purposes and the desired collective goals. Aldrich and Ruef (2006) explained that commensalism is about intra-organisational competition and cooperation. Symbiosis is about balancing mutual interdependence between different organisations. For example, the strategic organisational

purpose of UN humanitarian assistance and disaster management agencies is building the capacity of member states to meet extreme events and disasters. Among the operational purposes of UN agencies are coordinating aid support within the UN system, providing technical training and assistance through sharing best practice by cluster approach (Altay & Pal, 2014; OCHA, 2019). In addition, UN agencies demonstrated desired goals that can be achieved only by collaboration, *inter alia*, building the overall capacity of member states' emergency logistics, creating synergy and promoting innovativeness by linking existing networks, supporting member states to attain national goals as regional champion of humanitarian assistance and disaster relief. Without knowledge of the barriers to cross-sector collaboration and the four types of disaster collaboration, UN agencies face challenges to accomplish the agencies' strategic and operational purposes as well as the desired goals, particularly during a disaster.

One may surmise that, with a responsible disaster actor present, e.g., a central government agency like NADMA, problems that arose from a disaster will be resolved eventually with or without collaboration with other partners. However, in practice, public managers, as well as other committed disaster management organisations, were aware that there are desirable outcomes that can be attained only through collaboration in responding to a disaster.

6.4.2. *Failure to use collaboration to manage disaster response*

In general, collaboration is regarded useful in tackling post-disaster problems but it does not always happen effectively, or sustainably. At times it was completely avoided as found in this study. Although most organisations prefer collaborating with other organisations to resolve problems that are too big to resolve if they acted alone, collaborative partners such as assisting government agencies, international NGOs and major local NGOs, prefer to retain their autonomy, discretion and control. This is an obstacle to collaboration. The barriers are perceived organisational status and hierarchy, varying levels of motivation to collaborate and the ability of the organisation to collaborate in a disaster. Failing to address these barriers and a lack of understanding of the four types of collaboration, public managers in Southeast Asian countries may find it difficult to apply collaboration for effective, coordinated disaster response.

Different perceptions towards collaboration adversely affected decisions by stakeholders to use collaboration in a disaster response. For example, commonly in the literature on collaboration it is suggested that collaboration begins *after* the initial conditions (Bryson et al., 2006) or

starting conditions (Ansell & Gash, 2008) or when some 'wicked' problems are in place (Agranoff & McGuire, 2001, 2003; Koppenjan & Klijn, 2004). However, disaster collaboration can take place earlier, before the onset of a disaster, given the availability of common ground, bridging actors or protagonists (Spekkink & Boons, 2016) and knowledge of the three identified barriers and the four types of collaboration. For instance, a convening organisation may make an early investment, prior to disasters, to address current limitations related to organisation status and hierarchy, motivation or the ability to collaborate in a disaster.

In addition, the varying conceptualisations of collaboration may lead to different emphases on or dimensions of the joint effort. This could hinder organisations from using collaboration to address severe public problems. For example, organisations that promote the 'process model' emphasis the sequential phases of problem-setting, direction-setting and structuring (McCann, 1983) showing a lack of flexibility and agility to work towards common outcomes with multiple stakeholders in disaster settings. The main purpose of problem-setting is to identify stakeholders and allow them to communicate explicitly on situation. In the direction-setting phase, stakeholders communicate their intended values which they believed useful for mutually desired objectives. 'Structuring' happens when stakeholders began to strengthening the appreciative process between them in an interdependent environment (McCann, 1983). These three phases are important processes for effective collaboration to deliver desired results (Gray, 1989). However, the process of identification of stakeholders, articulation on common values and development of collective appreciation process is difficult to achieve without negotiations, and time consuming, and after all, seemingly difficult to meet when collaborating in disasters.

In addition, 'domain-level collaboration', as Gray (1985, 1989) synthesised from the previous work of organisational theory, policy analysis and organisation development is another collaborative perspective commonly practised. Domain-level collaboration values interactions of actors within existing inter-organisational system, underorganised systems or underdeveloped potential networks, problem sphere that demand collective actions, as well as process-driven instead of cross-sectorial approach that oriented toward influential individual actors at the expense of entire system dynamic (Gray, 1985, 1989). Organisations promote domain-level collaboration compete for resources in an interdependent and changing environment, and believe in adversarial methods to resolve problem where organisations take into account the actions of opponents (e.g., businesses anticipate competitors' strategies) (Gray, 1985, 1989; Thagard, 1992). While emphases on relationships of inter-organisational in contextual environment is important in collaboration but competing for resources and

adversarial problem solving method are unwanted focus to partners who want to collaborate in disasters.

What suggested by Ansell and Gash (2008) as 'collaborative governance' is a formal strategy of engaging state and non-state stakeholders to implement public policy or manage public assets through consensus-driven decision-making process. Expanding from this definition, 'contingency model of collaborative governance' was developed base on four major building blocks: "starting conditions, institutional design, facilitative leadership and collaborative process" (Ansell & Gash, 2008, p. 550). Stakeholders who incline to collaborative governance will likely ended up with formal activity such as a disaster simulation exercise characterised by joint structures and shared resources (Walter & Petr, 2000). Collaborative governance is useful to manage surprise, uncertainty and emergencies as evidenced in responding to rare floods in Germany's Dresden region (Hutter, 2016), Haiti earthquake and Pakistan floods (Kapucu, 2015). However, disasters collaboration can happen earlier before the 'start condition'. Moreover, compliance to basic ground rules critical for procedural legitimacy, availability of leaders who have experience in dealing with trade-offs and dilemmas (Ansell & Gash, 2012; Provan & Kenis, 2008) and the ideals to develop trust and commitment through the iterative interactions among actors are deemed challenging conditions to disaster collaboration.

Organisations that promote 'bona fide network perspective' (K. Cooper & Shumate, 2012) place more value on building memberships within a network than on designing network boundaries. It is a kind of collaboration building on multiplex relationships, and pays attention to external factors that influence inter-organisational networks and within the network (K. Cooper & Shumate, 2012). Building a cohesive membership network and managing environmental exigencies are critical to successful collaboration. However, developing collaboration in disasters are time sensitive, and while organisations may be attempted to manage or contain external factors of collaboration, they may have little resource or choice in building a desired membership network in disasters.

Narrowly defined, 'networked governance' happens when three or more legally autonomous organisations work together to achieve both individual and a collective objective (Provan & Kenis, 2008). The key characteristics of networked governance are goal-directed, limited formal accountability and voluntary compliance to rules and procedures (Provan & Kenis, 2008). Later, some applied the concept of networked governance to study how inter-

organisational relationships spanning across a timeframe including both pre- and post-disaster phases can be maintained amidst network complexity and increased utilisation of information and communication technologies in disaster management (Kapucu & Garayev, 2013, 2014). Kapucu and Garayev's (2013, 2014) study on networked governance is built on the early work of Klijn and Koppenjan (2006) where they envisioned networked governance loosely as efforts of shared goals and responsibilities and coordinated actions to achieve common results. Understanding the characteristics and application of networked governance, it seems a practical perspective for collaboration in disasters. However, effective collaboration in disasters is not limited to legitimate organisations but including individuals who may be affected as a result of the disaster or experts who may shape the design of how a disaster should be responded to towards collective goals.

Pending the preferences of an organisation on collaboration, and knowledge of the three barriers to cross-sector collaboration and four types of collaboration in disasters, different collaborations occur. As a result, organisations find it challenging to assert collaboration as a means to manage disaster problems. Designing optimum conditions for cross-sector collaboration in disasters depends on the preferences of an organisation on collaboration, and the presence of knowledge of the three barriers to cross-sector collaboration and four types of collaboration in disasters,

6.5. Chapter summary

This chapter describes and explains the importance of two findings. The detailed discussions on the findings provide insights for addressing the research question: "What hinders cross-sector collaboration in disasters?" First, that there are three barriers to cross-sector and inter-organisational collaboration in disasters: a) perceived organisational status and hierarchy; b) different levels of motivation to collaborate; and c) organisational lack of ability to collaborate. Second, there are four types of collaboration: 1) enthusiastic, 2) mandate-driven, 3) reluctant and 4) non-collaboration. Organisations that overlook or with little knowledge of the barriers will face challenges to accomplish desired goals that can be achieved only by collaboration, or will find it difficult to support collaboration to manage a disaster response. The next chapter presents possible future research, the research limitations, and contributions for academics and practitioners.

Chapter 7: Conclusion

There can be no real freedom in rebirth without conscious severance from the past, without either the ability to bring the whole past to a significant and harmonious conclusion, or the courage to say 'finished', and to dismiss the memory of what one must leave unfinished, unassimilated, unresolved if one is to enter the new life, the new cycle of experience

--- Dane Rudhyar, author,
modernist composer and humanistic astrologer
USA (1895-1985)

7.1   Introduction

This final chapter discusses the novel contributions of this study of the barriers to cross-sector collaboration and the types of collaboration identified. The study's findings are embedded in the broader context of emergency management. This research has both scholarly and practical implications in using cross-sector collaboration as a strategy to tackle the complex problems following natural disasters. In addition to discussing these contributions, the chapter presents the study's limitations and makes recommendations for future research.

7.2   Approaches to disaster management

This section discusses two models of disaster management: the command and control and collaborative approaches. While aspects of both approaches are used in current practice, the command and control remains the dominant model in Malaysia. However, as discussed in Chapter 2, this model has its challenges. By increasing collaboration in disaster management, it is suggested here that some of the issues with the prevailing command and control model could be addressed.

Aligned with this proposition, China's response to two different earthquakes illustrates the recent move towards a more collaborative approach to disaster management. During the 2008 Wenchuan earthquake, China applied the traditional top-down approach in emergency rescue and response. The rescue operation involved mainly public-actors without NGOs during the initial stage. The deployment of 50,000 troops and armed police on the same day demonstrated the presence of military and that the military was in charge (E. Chan, 2013; Lu & Xu, 2014; Q. Zhang, Lu, Hu, & Lau, 2015). The overall rescue and recovery operation was generally successful (E. Chan, 2013) but disaster scholars claim that the top-down institutional framework impeded the development of community-based disaster management and overall township resilience capability; local government and communities were deprived of the opportunity to collaborate with civil society organisations, to put local disaster management policies into practice, learn to prepare for, respond to, and recover from disasters (Q. Zhang et al., 2015; X. Zhang, Yi, & Zhao, 2013). From the lessons in Wenchuan, China responded to

the Lushan earthquake in 2013 with a more flexible, collaborative approach (Lu & Xu, 2014). In addition to the military and armed police being deployed, NGOs and volunteers were also involved in the emergency rescue and relief (Lu & Xu, 2014; Wu, Ma, Jiang, & Jiang, 2013; Q. Zhang et al., 2015). The government's response to the Lushan earthquake demonstrated significant progress with faster action and integrated, coordinated rescue and relief work (Lu & Xu, 2014; Wu et al., 2013; Q. Zhang et al., 2015), illustrating the value of increasing collaboration in disaster management.

In the context of this Chinese case, researchers have proposed that integrating a more collaborative approach to disaster management, including increased participation of local communities and volunteers, improves the emergency management system, particularly in rescue and relief (E. Chan, 2013; Lu & Xu, 2014). Past research from Australasia suggests that including communities in the post-disaster work is not only useful in building communities' adaptive capacity but also builds their capacity to respond to future disasters (Paton, Johnston, Mamula-Seadon, & Kenney, 2014). Hence, a culture of preparedness particularly at community level is essential for effective disaster management (Johnston et al., 2013). Despite these known benefits of collaboration, public disaster agencies continue to mainly use the command and control model in responding to disasters because this model is a product of classical management thinking (Buck, Trainor, & Aguirre, 2006; Guo & Kapucu, 2015a). It allows for the insertion of legal authority and accountability (Adams et al., 2017), disseminate directives from higher echelon officials to lower rank officials (Drabek & McEntire, 2003) and emphasises on efficiency and effectiveness to deliver result (D. A. Alexander, 2008).

A review of the disaster management literature (Chapter 2) argues that the command and control model is not fully effective by itself (Chong & Kamarudin, 2018; Fjeldstad, Snow, Miles, & Lettl, 2012). This model is inspired by military experience (Malešič, 2015; Pigeau, 2002), and is commonly practised in hierarchical, bureaucratic organisations (Hill & Lynn, 2005; Hodgson, 2004). It is noteworthy that governments commonly prefer and encourage the hierarchical approach when responding to mega disasters (D. S. Miller et al., 2008; Unlu et al., 2010; Zaw & Lim, 2017; Q. Zhang et al., 2015). However, bureaucracies are designed to respond to predictable societal needs and appear to be unsuitable for tackling a disaster's consequences, which are highly contextual (Lyden, 1974; Stark, 2014). Public disaster agencies need to be adaptive in an emergency (Ansell, Boin, & Keller, 2010; Comfort, Boin, & Demchak, 2010). Seeking a balance between a bureaucratic structure and adaptive behaviour is a prevalent problem for organisational theory and a constant challenge for disaster management

policy makers and practitioners (Comfort et al., 2010; Hill & Lynn, 2005; O'Toole, Meier, & Nicholson-Crotty, 2005). Increasing collaboration has been suggested to be one way to overcome the limitations of bureaucracy (Moynihan, 2009; Stark, 2014).

In practice, even military organisations are moving away from a hierarchical structure to win in warfare (McChrystal, Fussell, Collins, & Silverman, 2015). General McChrystal won the war against terrorists in Iraq with an improved model that broke down authority silos and strengthened decision making toward achieving common goal. A flexible, flatter 'team of teams' concept, i.e.: combining centralised communication with decentralised managerial authority, was a contributing factor (McChrystal et al., 2015). This more contemporary approach to handling extreme events in high-stakes and time-sensitive situations, could also be suitable in disaster management.

The present finding suggest that public disaster agencies are challenged in their search for an appropriate approach to deliver collaborative disaster management. Public disaster agencies experience an organisational paradox in handling disasters because, on one hand, a disaster response requires detailed planning, clear communication and effective organisation skills but, on the other hand, it is spontaneous and unpredictable (Stark, 2014; Waugh Jr & Streib, 2006). Some disaster scholars argue that when a civilian-led government agency is not present, and only when such agency is not in charge, the command and control model is deemed an effective approach to disaster management (D. S. Miller et al., 2008; Uhr, 2017; Zaw & Lim, 2017). Building trust with collaborative partners while maintaining a level of control can be challenging, as a high level of control can lead to a low levels of trust (Bachmann, Knights, & Sydow, 2001; Bijlsma-Frankema & Costa, 2005). Though a high level of situational control enhances operational efficiency, it limits the opportunities to build trust with others (Bijlsma-Frankema & Costa, 2005). Bijlsma-Frankema and Costa (2005) suggest that a complementary perspective is possible where control and trust may co-exist and reinforce each other. Both 'substitutional' (e.g., high level of control but low level of trust) and 'complementary' (e.g., balancing between levels of control and trust) approaches were evident in the present study; the former was more prevalent than the latter. The key message here is that finding a balance between control and trust is challenging but that a more collaborative approach could help facilitate this balance. A more collaborative approach has strengths in building trust and enabling mutual learning experiences, is conducive to enhancing public service accountability and promoting good governance.

This study suggests new insights for public disaster agencies to manage disasters effectively within the existing disaster management model without altering organisational structure, overhauling current collective networks or additional investment in infrastructure. I propose that using a more collaborative approach within the existing command and control framework can increase the effectiveness of disaster management. Indeed, this study's participants recollected their experience from a disaster response where a more collaborative approach had resulted in a positive outcome. That is, participants with an operational background from assisting government agencies and major local NGOs recollected that the authoritative model led to an uncoordinated disaster response as they had experienced in previous official relief responses. Instead, they posited that the collaborative approach that they adopted in a separate, recent relief response brought positive outcomes, such as enhanced two-way learning, strengthened situational awareness, enabled a common operating picture, and enhanced inter-agency networking. To these operational participants, less formal organisation control and rigidity stimulated higher levels of trust with collaborating partners. While there appears to be support for adopting a more collaborative approach, this study identified three key barriers to cross-sector collaboration that can impede disaster actors in using collaborative approach within the more dominant command and control framework.

In addition to research suggesting benefits of the collaborative approach (Moshtari & Gonçalves, 2017; Reitan, 1998), this research also identified that public disaster agencies will face challenges if continuing to use the command and control model in disaster management. First, it creates friction between central and state public disaster agencies that may remain unresolved; second, there is a low level of trust between disaster aid recipients and public disaster agencies, and third, a fragmented network is created within the national disaster management sphere.

As found in this research, in order for NADMA to adopt a more collaborative approach, NADMA's roles need to be clearer to its collaborative partners (i.e., barrier 1: perceived organisational status and hierarchy). In addition, disaster stakeholders need to see the urgency and importance of collaborating with non-public actors to build trust and mobilise resources to achieve intended outcomes (barrier 2: different level of motivation to collaborate). And finally, resource limitations, including lack of funding, experienced employees and necessary relationships, need to be managed before disasters strike (barrier 3: organisation lacks of ability to collaborate in disasters). It is suggested that addressing these three barriers can move agents from reluctant to more enthusiastic collaborators.

Integrating a collaborative perspective into the existing command and control framework is likely to have many benefits as discussed above. A collaborative approach can help build trust between central and state public disaster agencies, promote a closer relationship between public disaster agencies and aid recipients through a longer term community-based disaster management programme, and strengthen the network among national disaster management actors through joint activities throughout the different phases of disaster management. It is noteworthy that relationship alignment between government and non-government entities is instrumental in developing collaborative disaster management but requires coordinated, cohesive action, and that is guided by shared responsibility and authority (Kapucu, Arslan, & Demiroz, 2010; Waugh Jr & Streib, 2006). Using a collaborative approach to strengthen disaster management within a hierarchical bureaucracy, collaborative inter-personal skills (Waugh Jr & Streib, 2006) and an appropriate mix between hierarchy and collaboration are needed (Moynihan, 2009). De Meuse (2009) reveals that the success of team effectiveness is building on the desire for collaboration and learning to work together towards collective actions and a common objective. While some of this study's participants expressed a desire for increased cross-sector collaboration, this research suggests that such a change requires to build upon the knowledge of three key barriers and interactions between the four types of collaborators identified in the findings. Such knowledge is not found between public disaster agencies and collaborative partners in the Malaysia context.

7.3   Contributions and implications

This study contributes to both the theory and practice of disaster management. The study's findings present two key theoretical contributions: key barriers to cross-sector collaboration and types of collaboration in disasters.

The findings contribute to the current literature on collaboration in disasters. For example, collaboration between governmental and non-governmental organisations is believed capable of improving service delivery and strengthening relationships with the local community (Snavely & Tracy, 2000). However, this study found that, in practice, governmental and non-governmental organisations have a low level of trust for each other which leads to reluctant collaboration, one of the four types of collaboration identified in this study. Literature also suggests that ad hoc collaboration can be developed quickly (Goldstein & Butler, 2009; Margerum, 2002; O'Leary & Vij, 2012) while longer-term collaboration is more challenging (Connelly et al., 2008; Huxham, 1996; Uhr, 2017). Nevertheless, this study found that because

of the three barriers to cross-sector collaboration, ad hoc collaboration can be problematic too. For example, perceived different organisational values and capacities hindered two NGOs from collaborating even on an ad hoc basis, resulting in non-collaboration (another type of collaboration identified in this research). In addition, literature suggests that public administration encourages public agencies to collaborate with external partners (Jensen et al., 2015; S. Patrick, 2014; Sørensen, 2012). This is due to collaboration being seen as an effective strategy to respond to disruptive situations, to diffuse risk, offer learning opportunities and strengthen legitimacy (M. K. Foster & Meinhard, 2002; Gazley & Brudney, 2007; Provan et al., 2015; Provan & Milward, 1995). However, in practice, public actors who intend to use collaboration but are unaware of the three barriers as discussed in Chapter 6, will find initiating collaboration difficult.

The study's findings suggest various challenges to collaboration in disasters in Malaysia; the lack of awareness or knowledge of collaborative disaster management is likely to cause similar challenges to cross-sector collaboration in disasters in other parts of the world as well. This study shows that a clear relationship exists between the perceptions of collaborating partners' ability and the desire to develop collaboration with partners in disaster management. For example, a positive perception towards collaborating partners developed during the pre-disaster phase increases motivation to collaborate in disasters. Conversely, failing to address the barriers to collaboration appropriately prior to a disaster may result in two outcomes: the desirable outcomes for disaster relief that the leading agency intends to achieve through cross-sector collaboration will be compromised; and the lead agency will face difficulties in using collaboration to manage disaster aftermath problems. To be effective, cross-sector collaboration has to start from pre-disaster and continue to the post-disaster stage.

Formal collaboration could take place before a disaster given a shared setting and with the availability of bridging actors who facilitate subsequent actions (Brunner, 2002; Bushouse et al., 2011; Coetzee, Van Niekerk, & Raju, 2016; Spekkink & Boons, 2016). Therefore, more attention should be focused on collaboration in the pre-disaster preparatory phase if organisations aim to promote multi-stakeholder collaboration during the post-disaster phase (Scholtens, 2008). Knowledge of the types of collaboration and the barriers to cross-sector collaboration in disasters might enable organisations to work better in the preparatory phase, which, in turn, can lead to more effective disaster management. That is, what organisational leaders and organisations do during the pre-disaster preparatory phase influences cross-sector collaboration in the post-disaster phase.

Natural disasters strike frequently and responses to disasters are increasingly complicated with the influx of diverse stakeholders. Thus, responding to a disaster aftermath using the command and control model is increasingly difficult because it involves multi-level coordination (Hovik & Hanssen, 2015; McGuire, 2006). Given the limitations of the command and control model as discussed, the collaborative approach is useful to address some of those limitations but the three barriers to collaboration identified in this study need to be acknowledged and addressed. The next step public managers can make is to reach out to potential collaborative partners and introduce their roles and mandates. For example, public managers can contact a more established local major NGO who can complement public disaster agencies' operations during response, recovery and reconstruction phases through both formal and informal arrangements (ASEAN, 2016; ASEAN Secretariat, 2009, 2014, 2016; Bae, Joo, & Won, 2016; Bano, 2019; Gupta, 2010; Provan & Kenis, 2008).

7.4   Research limitations and future research recommendations

The current study has a number of potential limitations that provide opportunities for future research in disaster management. First, although I applied and adhered to all qualitative research process tools such as coding, memoing, constant comparisons and theoretical saturation, it is acknowledged that another researcher coming from a different perspective of background may interpret the data differently and perhaps draw conclusions from the data that vary from those here.

Secondly, a potential limitation of this study was the access to and interviewing of the 'right' participants. The findings might be different if a researcher interviewed different key decision makers of the Malaysian public disaster agencies and their collaborating partners. Eighty per cent (n=24) of the research participants interviewed were strategic or operational decision makers of various specialisations in disaster management. The need to interview both strategic and operational leaders has been discussed in earlier chapters because of their hands-on experience and knowledge of disaster management. However, the limitations in interviewing only key decision makers must be acknowledged here. These decision makers may have shared selective, formal information that was deemed positive and showed their organisation in a favourable light. There is no reason to suspect any participants withheld important information, but social desirability played a part in the information shared; one cannot be certain that participants' actual experiences were reflected unreservedly in what they shared in the interviews. In addressing this limitation, future research may include participants from other

organisational levels, such as more junior first responders. Doing so would increase the variety of information sources.

Thirdly, focusing on one type of natural disaster, flooding, may not be able to capture the intended rigour of events following a disaster. Flooding is generally predictable and likely to cause predictable outcomes compared with other unpredictable and sudden onset disasters such as earthquakes, tsunamis and landslides, which require the participation of different technical agencies, though relief support is generally the same. This study mainly included participants who have experienced severe floods, though some had previously responded to earthquakes, tsunamis and landslides. Including a sudden onset disaster such as an earthquake or landslide into the study, in addition to floods, could strengthen the rigour of the data.

Finally, my constructive rapport with the key informants and familiarity with the research context had both strengths and potential limitations. Since I knew these participants, they treated me as an *insider,* which allowed me a degree of freedom to ask questions and to attain, perhaps, favourable data. However, addressing the potential bias, and to minimise such an unintended risk, only 10 of the total 30 research participants interviewed were acquaintances through a previous working relationship. The other 20 interviewees were non-acquaintances developed through a snowball technique from interviewing the key informants, or through recommendations from subject matter experts who were not research participants. Prior acquaintance with some participants enabled the researcher to access the 'right' people to interview, especially during the hectic, stressful end phase of a recent disaster flood response. Although these limitations were considered, efforts were made to maximise the credibility and reliability by meeting the tests of construct validity, internal validity, and external validity from the initial case study design plan as discussed in Chapter 3 (Yin, 2014).

The current findings may contribute to future research in other areas, or motivate other researchers and practitioners to tackle problems of disaster aftermath through collaborative disaster management by:

- continuing to look for a way how collaboration can be strengthened in disasters;
- investigating the mechanism through which reluctant but critical collaborators can be moved towards enthusiastic collaborators in disasters;
- examining how strategic decision-makers are capable of managing the relationship of a new alliance through oscillating between command and control and collaborative leadership styles in disasters; and

- advancing the knowledge about how the command and control and collaborative models can be combined to form a hybrid network approach for effective disaster management.

7.5   Concluding remarks

The increasing frequency and intensity of natural disasters globally (UNESCAP, 2016; UNISDR, 2004), combined with the rapidly changing geo-political, economic and sociocultural contexts, have increased the complexity of disaster management (McEntire, 2004) and demand new ways of working. Relying on a single disaster management perspective is inadequate and impede disaster actors to adopt other practice including collaborative approach in responding to disasters (Hermansson, 2016; McEntire, 2004; Raikes & McBean, 2016; Wankhade & Patnaik, 2019b). Increasing collaboration between disaster actors can increase the effectiveness of disaster management; however, collaboration between multiple partners in a complex, uncertain environment is challenging.

This study addressed the difficulties of organisations, networks and individuals working together in the disruptive and uncertain context of a disaster aftermath. The findings suggest four types of collaboration and the interactions between them informed three key barriers to cross-sector collaboration in disasters. By acknowledging and addressing these barriers, cross-sector collaboration can become more effective. Furthermore, some of the limitations of the command and control model can be addressed through the knowledge of key barriers and types of collaboration obtained prior to disasters. Policy makers and practitioners with this knowledge can benefit from this study to deliver higher quality public good in disaster management.

References

Adams, R., Owen, C., Scott, C., & Parsons, D. P. (2017). *Beyond command and control: Leadership, culture and risk*. Boca Raton, FL: CRC Press.

Adeleye, O. A., & Ofili, A. N. (2010). Strengthening intersectoral collaboration for primary health care in developing countries: Can the health sector play broader roles? *Journal of Environmental and Public Health, 2010*, 272896-272896. https://doi.org/10.1155/2010/272896

Agranoff, R., & McGuire, M. (2001). Big questions in public network management research. *Journal of Public Administration Research and Theory: J-PART, 11*(3), 295-326. https://doi.org/10.1093/oxfordjournals.jpart.a003504

Agranoff, R., & McGuire, M. (2003). *Collaborative public management: New strategies for local governments*. Washington, DC: Georgetown University Press.

AHA Centre. (2015a). *The column: AHA Centre news bulletin*. Retrieved from https://ahacentre.org/wp-content/uploads/2016/12/TheColumnVol001.pdf

AHA Centre. (2015b). *Situation update No.1: Flood/Malaysia*. Jakarta: AHA Centre. Retrieved from https://reliefweb.int/sites/reliefweb.int/files/resources/SituationUpdate_1_AHA_MAL_FL2015.pdf

Aitsi-Selmi, A., Egawa, S., Sasaki, H., Wannous, C., & Murray, V. (2015). The Sendai Framework for Disaster Risk Reduction: Renewing the global commitment to people's resilience, health, and well-being. *International Journal of Disaster Risk Science, 6*(2), 164-176. https://doi.org/10.1007/s13753-015-0050-9

Alberts, D., & Hayes, R. (2007). *Planning: Complex endeavors*. Washington, D.C.: CCRP.

Aldrich, D. (2012). *Building resilience: Social capital in post-disaster recovery*. Chicago, IL: University of Chicago Press.

Aldrich, H., & Ruef, M. (2006). *Organizations evolving* (2nd ed.). Thousand Oaks, CA: Sage.

Alexander, D. A. (1993). *Natural disaster*. New York, NY: Chapman and Hall.

Alexander, D. A. (2008). Emergency command systems and major earthquake disasters. *Journal of Seismology and Earthquake Engineering, 10*(3), 138-146.

Alexander, D. A., Masini, E., & Mugnai, L. (2013). *Integrated emergency management for mass casualty emergencies.* Paper presented at the Proceedings of the NATO Advanced Training Course on Integrated Emergency Management for Mass Casualty Emergencies Organized by CESPRO, University of Florence, Italy.

Alexander, H. (2014). More than 160,000 evacuated in Malaysia's worst ever floods. The Telegraph. Retrieved from http://www.telegraph.co.uk/news/worldnews/asia/malaysia/11314382/More-than-160000-evacuated-in-Malaysias-worst-ever-floods.html

Allen, C. R., Fontaine, J. J., Pope, K. L., & Garmestani, A. S. (2011). Adaptive management for a turbulent future. *Journal of Environmental Management, 92*(5), 1339-1345. https://doi.org/10.1016/j.jenvman.2010.11.019

Altay, N., & Pal, R. (2014). Information diffusion among agents: Implications for humanitarian operations. *Production and Operations Management, 23*(6), 1015-1027. https://doi.org/10.1111/poms.12102

Andersson, C. M., Bjärås, G., Tillgren, P., Östenson, C.-G., & Mälardalens, h. (2005). A longitudinal assessment of inter-sectoral participation in a community-based diabetes prevention programme. *Social Science & Medicine, 61*(11), 2407-2422. https://doi.org/10.1016/j.socscimed.2005.04.032

Ansell, C., Boin, A., & Keller, A. (2010). Managing transboundary crises: Identifying the building blocks of an effective response system: Managing transboundary crises. *Journal of Contingencies and Crisis Management, 18*(4), 195-207. https://doi.org/10.1111/j.1468-5973.2010.00620.x

Ansell, C., & Gash, A. (2008). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory, 18*(4), 543-571. https://doi.org/10.1093/jopart/mum032

Ansell, C., & Gash, A. (2012). Stewards, mediators, and catalysts: Toward a model of collaborative leadership. *Innovation Journal, 17*(1), 2-21.

Aoki, N. (2015a). Collaborative manpower support for restoring hope in the aftermath of the March 11 disasters in Japan. In C. Brassard, D. W. Giles, & A. M. Howitt (Eds.), *Natural disaster management in the Asia-Pacific: Policy and governance* (pp. 101-118). Tokyo, Japan: Springer.

Aoki, N. (2015b). Wide-area collaboration in the aftermath of the March 11 disasters in Japan: Implications for responsible disaster management. *International Review of Administrative Sciences, 81*(1), 196-213. https://doi.org/10.1177/0020852314541563

Aoki, N. (2016). Adaptive governance for resilience in the wake of the 2011 great east Japan earthquake and tsunami. *Habitat International, 52*, 20-25. https://doi.org/10.1016/j.habitatint.2015.08.025

Argyle, M. (2013). *Cooperation: The basis of sociability*. New York, NY: Routledge.

Arnstein, S. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners, 35*, 216-224.

ASEAN. (2016). One ASEAN One Response: Faster and collective response to disasters in and outside the region. Retrieved from https://asean.org/one-asean-one-response-faster-and-collective-response-to-disasters-in-and-outside-the-region/

ASEAN Secretariat. (2005). ASEAN Agreement on Disaster Management and Emergency Response (AADMER). Retrieved from http://agreement.asean.org/media/download/20140119170000.pdf

ASEAN Secretariat. (2009). *A bridge to recovery: ASEAN's response to the Cyclone Nargis*. Jakarta, Indonesia: ASEAN Secretariat. Retrieved from https://reliefweb.int/report/myanmar/bridge-recovery-aseans-response-cyclone-nargis

ASEAN Secretariat. (2013). Investing in ASEAN 2013-2014. Retrieved from https://www.usasean.org/system/files/downloads/Investing-in-ASEAN-2013-14.pdf

ASEAN Secretariat. (2014). *Weathering the perfect storm: Lesson learnt on the ASEAN's response to the aftermath of Typhoon Haiyan.* Jakarta: ASEAN Secretariat.

ASEAN Secretariat. (2016). *ASEAN vision 2025 on disaster management.* Retrieved from http://www.asean.org/wp-content/uploads/2012/05/fa-220416_DM2025_email.pdf

Auzzir, Z. A., Haigh, R. P., & Amaratunga, D. (2014). Public-private partnerships (PPP) in disaster management in developing countries: A conceptual framework. *Procedia Economics and Finance, 18*, 807-814. https://doi.org/http://dx.doi.org/10.1016/S2212-5671(14)01006-5

Avis, M. (2003). Do we need methodological theory to do qualitative research? *Qualitative Health Research, 13*(7), 995-1004. https://doi.org/10.1177/1049732303253298

Bachmann, R., Gillespie, N., & Priem, R. (2015). Repairing trust in organizations and institutions: Toward a conceptual framework. *Organization Studies, 36*(9), 1123-1142. https://doi.org/10.1177/0170840615599334

Bachmann, R., & Inkpen, A. C. (2011). Understanding institutional-based trust building processes in inter-organizational relationships. *Organization Studies, 32*(2), 281-301. https://doi.org/10.1177/0170840610397477

Bachmann, R., Knights, D., & Sydow, J. (2001). Trust and control in organizational relations. *Organization Studies, 22*(2), V-VIII.

Bachmann, R., & Zaheer, A. (2008). Trust in inter-organizational relations. In S. Cropper, C. Huxham, M. Ebers, & P. Smith Ring (Eds.), *The Oxford handbook of inter-organizational relations*. Oxford, United Kingdom: Oxford University Press.

Bae, Y., Joo, Y.-M., & Won, S.-Y. (2016). Decentralization and collaborative disaster governance: Evidence from South Korea. *Habitat International, 52*, 50-56. https://doi.org/10.1016/j.habitatint.2015.08.027

Bailey, D., & Koney, K. M. (1996). Interorganizational community-based collaboratives: A strategic response to shape the social work agenda. *Social Work, 41*(6), 602-611. https://doi.org/10.1093/sw/41.6.602

Bamford, J. D., Gomes-Casseres, B., & Robinson, M. S. (2003). *Mastering alliance strategy: A comprehensive guide to design, management, and organization*. San Francisco, CA: Wiley Jossey-Bass.

Bano, M. (2019). Partnerships and the good-governance agenda: Improving service delivery through state–NGO collaborations. *Voluntas: International Journal of Voluntary and Nonprofit Organizations, 30*(6), 1270-1283. https://doi.org/10.1007/s11266-017-9937-y

Barbalet, J. (2015). Guanxi, tie strength, and network attributes. *American Behavioral Scientist, 59*(8), 1038-1050. https://doi.org/10.1177/0002764215580613

Bardach, E. (1998). *Getting agencies to work together: The practice and theory of managerial craftsmanship*. Washington, DC.: Brookings Institution Press.

Bedwell, W. L., Wildman, J. L., DiazGranados, D., Salazar, M., Kramer, W. S., & Salas, E. (2012). Collaboration at work: An integrative multilevel conceptualization. *Human Resource Management Review, 22*(2), 128-145. https://doi.org/10.1016/j.hrmr.2011.11.007

Bengtsson, M., & Kock, S. (2000). "Co-opetition" in business networks - To cooperate and compete simultaneously. *Industrial Marketing Management, 29*, 411-426.

Bengtsson, M., Raza-Ullah, T., & Vanyushyn, V. (2016). The coopetition paradox and tension: The moderating role of coopetition capability. *Industrial Marketing Management, 53*, 19-30. https://doi.org/10.1016/j.indmarman.2015.11.008

Bennett, S. (2012). *Innovative thinking in risk, crisis, and disaster management*. Burlington, VT: Gower.

Berlin, J. M., & Carlström, E. D. (2015). The three-level collaboration exercise: Impact of learning and usefulness. *Journal of Contingencies & Crisis Management, 23*(4), 257-265. https://doi.org/10.1111/1468-5973.12070

Beser, E. (2011). Community intervention studies with intersectoral collaboration. *Journal of Environmental Protection and Ecology, 12*(4), 1883-1892.

Bhaskar, R. (2002). The philosophy of meta-reality: Part II: Agency, perfectibility, novelty. *Journal of Critical Realism, 1*(1), 67-93. https://doi.org/10.1558/jocr.v1i1.67

Bier, V. (2006). Hurricane Katrina as a bureaucratic nightmare. In R. Daniels, D. Kettl, & H. Kunreuther (Eds.), *On risk and disaster: Lessons from Hurricane Katrina* (pp. 243-254). Philadelphia, PA: University of Pennsylvania Press.

Biermann, R. (2008). Towards a theory of inter-organizational networking: The Euro-Atlantic security institutions interacting. *The Review of International Organizations, 3*(2), 151-177.

Bijlsma-Frankema, K. M., & Costa, A. C. (2005). Understanding the trust-control nexus. *International Sociology, 20*(3), 259-283. https://doi.org/10.1177/0268580905055477

Bingham, L. B., & O'Leary, R. (2006). Conclusion: Parallel play, not collaboration: Missing questions, missing connections. *Public Administration Review, 66*(1), 161-167. https://doi.org/10.1111/j.1540-6210.2006.00686.x

Bingham, L. B., O'Leary, R., & Carlson, C. (2008). Frameshifting lateral thinking for collaborative public management In L. B. Bingham & R. O'Leary (Eds.), *Big ideas in collaborative public management* (pp. 1-16). New York, NY: M.E. Sharpe.

Birkland, T. A. (2009). Disasters, lessons learned, and fantasy documents. *Journal of Contingencies and Crisis Management, 17*(3), 146-156. https://doi.org/10.1111/j.1468-5973.2009.00575.x

Birkmann, J., Fernando, N., & Hettige, S. (2006). Measuring vulnerability in Sri Lanka at the local level. In J. Birkmann (Ed.), *Measuring vulnerability to natural hazards: Towards disaster resilient societies* (pp. 329-356). Hong Kong, China: United Nations University.

Blanco, D. V. (2015). Disaster governance in the Philippines: Issues, lessons Learned, and future directions in the post-Yolanda super typhoon aftermath. *International Journal of Public Administration, 38*(10), 743-756. https://doi.org/10.1080/01900692.2014.979198

Boin, A. (2005a). From crisis to disaster: Towards an integrative perspective. In R. W. Perry & E. L. Quarantelli (Eds.), *What is a disaster? New answers to old questions* (pp. 153-172). Philadelphia, PA: Xlibris.

Boin, A. (2005b). *The politics of crisis management: Public leadership under pressure*. Cambridge, United Kingdom: Cambridge University Press.

Boin, A., & 't Hart, P. (2003). Public leadership in times of crisis: Mission impossible? *Public Administration Review, 63*(5), 544-553. https://doi.org/10.1111/1540-6210.00318

Boin, A., 't Hart, P., & McConnell, A. (2009). Crisis exploitation: Political and policy impacts of framing contests. *Journal of European Public Policy, 16*(1), 81-106. https://doi.org/10.1080/13501760802453221

Booher, D. E., & Innes, J. E. (2002). Network power in collaborative planning. *Journal of Planning Education and Research, 21*(3), 221-236. https://doi.org/10.1177/0739456X0202100301

Bouncken, R. B., & Fredrich, V. (2016). Learning in coopetition: Alliance orientation, network size, and firm types. *Journal of Business Research, 69*(5), 1753-1758. https://doi.org/10.1016/j.jbusres.2015.10.050

Bouncken, R. B., & Kraus, S. (2013). Innovation in knowledge-intensive industries: The double-edged sword of coopetition. *Journal of Business Research, 66*(10), 2060-2070. https://doi.org/10.1016/j.jbusres.2013.02.032

Bourgon, J. (2011). *A new synthesis of public administration: Serving in the 21st century* (Vol. 81). Montréal, Canada: McGill-Queen's Press-MQUP.

Bouwer, L. M. (2011). Have disaster losses increased due to anthropogenic climate change? *Bulletin of the American Meteorological Society, 92*(1), 39-46. https://doi.org/10.1175/2010BAMS3092.1

Bowles, S., & Gintis, H. (2011). *A cooperative species: Human reciprocity and its evolution*. Princeton, N.J: Princeton University Press.

Brassard, C., Howitt, A. M., & Giles, D. W. (2015). *Natural disaster management in the Asia-Pacific: Policy and governance* (2015 ed.). Tokyo, Japan: Springer

Breckenridge, J., & Jones, D. (2009). Demystifying theoretical sampling in grounded theory research. *Grounded Theory Review, 8*(2), 113-126.

Bridge to be built to keep floods at bay. (2017, January 8). *Sunday Star*. Retrieved from ttps://www.thestar.com.my/news/nation/2017/01/08/bridge-to-be-built-to-keep-floods-at-bay-structure-is-part-of-govts-planned-projects-on-longterm-sol

Brinkerhoff, J. M. (2002). Government–nonprofit partnership: A defining framework. *Public Administration and Development, 22*(1), 19-30. https://doi.org/10.1002/pad.203

Brinkerhoff, J. M. (2003). Donor-funded government–NGO partnership for public service improvement: Cases from India and Pakistan. *Voluntas: International Journal of Voluntary and Nonprofit Organizations, 14*(1), 105-122. https://doi.org/10.1023/A:1022997006704

Brooks, M. P. (2002). *Planning theory for practitioners*. Chicago, IL: Planner Press.

Bruderl, J., & Schussler, R. (1990). Organizational mortality: The liabilities of newness and adolescence. *Administrative Science Quarterly, 35*(3), 530-547.

Brunner, R. D. (2002). *Finding common ground: Governance and natural resources in the American West*. New Haven, CT: Yale University Press.

Bryman, A. (2012). *Social research methods* (3rd ed.). Oxford, United Kingdom: Oxford University Press.

Bryman, A., Liao, T. F., & Lewis-Beck, M. S. (2004). *The Sage encyclopedia of social science research methods*. London, United Kingdom: Sage.

Bryson, J. M., & Crosby, B. C. (2008). Failing into cross-sector collaboration successfully. In R. O'Leary & L. B. Bingham (Eds.), *Big ideas in collaborative public management* (pp. 55-78). New York, NY: M.E. Sharpe.

Bryson, J. M., Crosby, B. C., & Stone, M. M. (2015). Designing and implementing cross‐sector collaborations: Needed and challenging. *Public Administration Review, 75*(5), 647-663. https://doi.org/10.1111/puar.12432

Bryson, J. M., Crosby, C., & Stone, M. M. (2006). The design and implementation of cross-sector collaborations: Propositions from the literature. *Public Administration Review, 66*(1), 44-55.

Buchanan, L., & O Connell, A. (2006). A brief history of decision making. *Harvard Business Review, 84*(1), 32.

Büchel, B. (2000). Framework of joint venture development: Theory‐building through qualitative research. *Journal of Management Studies, 37*(5), 637-661.

Buck, D., Trainor, J., & Aguirre, B. (2006). A critical evaluation of the incident command system and NIMS. *Journal of Homeland Security Emergency Management, 3*(3). https://doi.org/10.2202/1547-7355.1252

Burgess, T., Braunack-Mayer, A., Tooher, R., Collins, J., O'Keefe, M., Skinner, R., . . . Marshall, H. (2016). Optimizing intersectoral collaboration between health and education: The Health Bridges study. *Journal of Public Health, 38*(4), E430-E437. https://doi.org/10.1093/pubmed/fdv190

Bush, R. (2015). Muhammadiyah and disaster response: Innovation and change in humanitarian assistance. In C. Brassard, D. W. Giles, & A. M. Howitt (Eds.), *Natural disaster management in the Asia-Pacific: Policy and governance* (pp. 33-48). Tokyo, Japan: Springer.

Bushouse, B. K., Jacobson, W. S., Lambright, K. T., Llorens, J. J., Morse, R. S., & Poocharoen, O. O. (2011). Crossing the divide: Building bridges between public administration practitioners and scholars. *Journal of Public Administration Research and Theory, 21*(1), I99-I112. https://doi.org/10.1093/jopart/muq063

Butts, C. T., Acton, R. M., & Marcum, C. S. (2012). Interorganizational collaboration in the Hurricane Katrina response. *Journal of Social Structure, 13*(1), 1-36.

Buuren, A. v., Buijs, J.-M., & Teisman, G. (2010). Program management and the creative art of coopetition: Dealing with potential tensions and synergies between spatial development projects. *International Journal of Project Management, 28*(7), 672-682. https://doi.org/10.1016/j.ijproman.2009.12.002

Carnwell, R., & Carson, A. (2008). *The concepts of partnership and collaboration*. Berkshire, United Kingdom: Open University Press.

Carpenter, C., & Suto, M. (2008). *Qualitative research for occupational and physical therapists: A practical guide*. Oxford, United Kingdom: Blackwell Publishing.

Carter, S. M., & Little, M. (2007). Justifying knowledge, justifying method, taking action: Epistemologies, methodologies, and methods in qualitative research. *Qualitative Health Research, 17*(10), 1316-1328.

CFE. (2016). *Malaysia: Disaster management reference handbook 2016*. Retrieved from https://www.cfe-dmha.org/LinkClick.aspx?fileticket=4RdMetNOcOE%3d&portalid=0

Chan, E. (2013). Bottom-up disaster resilience. *Nature Geoscience, 6*(5), 327-328. https://doi.org/10.1038/ngeo1815

Chan, N. W. (1995). Flood disaster management in Malaysia: An evaluation of the effectiveness of government resettlement schemes. *Disaster Prevention and Management, 4*(4), 22-29. https://doi.org/10.1108/09653569510093405

Chan, N. W. (1998). Responding to landslide hazards in rapidly developing Malaysia: A case of economics versus environmental protection. *Disaster Prevention and Management, 7*(1), 14-27. https://doi.org/10.1108/09653569810206244

Chang-Richards, A. Y., Seville, E., Wilkinson, S., Kachali, H., & Stevenson, J. R. (2014). Addressing inter-sectoral linkages and interdependencies: A study of the past disaster events

Chang, K. (2012). *Understanding cross-sector collaboration in emergency management: The dynamics of vertical and horizontal networks* (Doctoral dissertation). The Florida State University, Ann Arbor, FL.

Chang, Y., Wilkinson, S., Potangaroa, R., & Seville, E. (2011). Donor-driven resource procurement for post-disaster reconstruction: Constraints and actions. *Habitat International, 35*(2), 199-205. https://doi.org/10.1016/j.habitatint.2010.08.003

Chang, Y., Wilkinson, S., Seville, E., & Potangaroa, R. (2012). Changes in resource need for post-disaster reconstruction: A longitudinal study in China. *Building Research & Information, 40*(3), 327-336. https://doi.org/10.1080/09613218.2012.684867

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis*. London, United Kingdom: Sage

Charmaz, K. (2008). Grounded theory as an emergent method. In S. N. Hesse-Biber & P. Leavy (Eds.), *Handbook of emergent methods* (pp. 155-172). New York, NY: Guilford Press.

Charmaz, K. (2011). Grounded theory in social justice research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (pp. 359-380). Thousand Oaks, CA: Sage.

Charmaz, K. (2014). *Constructing grounded theory* (2nd ed.). London, United Kingdom: Sage.

Chen, B. (2010). Antecedents or processes? Determinants of perceived effectiveness of interorganizational collaborations for public service delivery. *International Public Management Journal, 13*(4), 381-407. https://doi.org/10.1080/10967494.2010.524836

Chen, J., Chen, T. H. Y., Vertinsky, I., Yumagulova, L., & Park, C. (2013). Public–private partnerships for the development of disaster resilient communities. *Journal of Contingencies and Crisis Management, 21*(3), 130-143.

Chen, Y., & Booth, D. (2011). *The Wenchuan earthquake of 2008: Anatomy of a disaster*. London, United Kingdom: Springer.

Cheong, S.-M. (2011). The role of government in disaster management: The case of the Hebei spirit oil spill compensation. *Environment and Planning C: Government and Policy, 29*(6), 1073-1086. https://doi.org/10.1068/c10170

Chesbrough, H. W. (2006). *Open innovation: The new imperative for creating and profiting from technology*. Boston, MA: Harvard Business School Press.

Chilisa, B. (2012). *Indigenous research methodologies*. Thousand Oaks, CA: Sage.

Chircop, A., Bassett, R., & Taylor, E. (2015). Evidence on how to practice intersectoral collaboration for health equity: a scoping review. *Critical Public Health, 25*(2), 178-191. https://doi.org/10.1080/09581596.2014.887831

Chong, N., & Kamarudin, K. H. (2018). Disaster risk management in Malaysia: Issues and challenges from the persepctive of agencies. *Journal of the Malaysian Institute of Planners, 16*(1), 105-117.

Chou, C. H., Zahedi, F. M., & Zhao, H. M. (2014). Ontology-based evaluation of natural disaster management websites: A multistakeholder perspective. *MIS Quarterly, 38*(4), 997-997.

Christensen, L. B., Johnson, B., & Turner, L. A. (2014). *Research methods, design, and analysis* (12th ed.). Boston, MA: Pearson.

Christensen, T., Andreas Danielsen, O., Lægreid, P., & Rykkja, L. H. (2016). Comparing coordination structures for crisis management in six countries. *Public Administration, 94*(2), 316-332. https://doi.org/10.1111/padm.12186

Christensen, T., Lægreid, P., & Rykkja, L. H. (2013). Wicked problems and the challenge of transboundary coordination: The case of emergency preparedness and crisis management in Norway. Retrieved from http://www.cocops.eu/wp-content/uploads/2013/05/COCOPS_workingpaper_No11.pdf

Christensen, T., Lægreid, P., & Rykkja, L. H. (2016). Organizing for crisis management: Building governance capacity and legitimacy. *Public Administration Review, 76*(6), 887-897. https://doi.org/10.1111/puar.12558

Civil Defence Department (JPAM) to be renamed APM next month, says Shahidan. (2016, August 21). *Malay Mail Online.* Retrieved from http://www.themalaymailonline.com/malaysia/article/civil-defence-dept-jpam-to-be-renamed-apm-next-month-says-shahidan

Civil Defence Emergency Management Act 2002. (2002). Retrieved from www.legislation.govt.nz

Clegg, B. (2008). The growing importance of inter-organisational collaboration. *Journal of Manufacturing Technology Management, 19*(3). https://doi.org/10.1108/jmtm.2008.06819caa.001

Coetzee, C., Van Niekerk, D., & Raju, E. (2016). Disaster resilience and complex adaptive systems theory: Finding common grounds for risk reduction. *Disaster Prevention and Management, 25*(2), 196-211.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology, 94*, S95-S120. https://doi.org/10.1086/228943

Comerio, M. C. (2014a). Disaster recovery and community renewal: Housing approaches. *Cityscape, 16*(2), 51-68.

Comerio, M. C. (2014b). Housing recovery lessons from Chile. *Journal of the American Planning Association, 80*(4), 340-350. https://doi.org/10.1080/01944363.2014.968188

Comfort, L. K. (2005). Fragility in disaster response: Hurricane Katrina, 29 August 2005. *The Forum, 3*(3), 1-8. https://doi.org/10.2202/1540-8884.1090

Comfort, L. K. (2007). Crisis management in hindsight: Cognition, communication, coordination, and control. *Public Administration Review, 67*(1), 189-197.

Comfort, L. K., Boin, A., & Demchak, C. C. (2010). *Designing resilience: Preparing for extreme events*. Pittsburgh, PA: University of Pittsburgh Press.

Comfort, L. K., & Kapucu, N. (2006). Inter-organizational coordination in extreme events: The World Trade Center attacks, September 11, 2001. *Natural Hazards, 39*(2), 309-327. https://doi.org/doi: 10.1007/s11069-006-0030-x

Connelly, D., Zhang, J., & Faerman, S. (2008). The paradoxical nature of collaboration. In L. B. Bingham & R. O'Leary (Eds.), *Big ideas in collaborative public management* (pp. 17-35). New York, NY: M.E. Sharpe.

Cooper, K., & Shumate, M. (2012). Interorganizational collaboration explored through the bone fide network perspective. *Management Communication Quarterly, 26*(4), 623-654. https://doi.org/10.1177/0893318912462014

Cooper, T. (2015). Empirical research on inter-organizational relations within a national disaster management network in the Caribbean. *Public Organization Review, 15*(1), 1-16. https://doi.org/10.1007/s11115-013-0248-5

Coppola, D. P. (2015). *Introduction to international disaster management* (3rd ed.). Oxford, United Kingdom: Elsevier.

Corbin, J., & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Los Angeles, CA: Sage

Corbin, J., & Strauss, A. (2012). Theoretical sampling. In J. Corbin & A. Strauss (Eds.), *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3 ed.). Thousand Oaks, CA: Sage.

Cornall, R. (2005). New levels of government responsiveness for `all-hazards': The management of natural disasters and emergencies. *Australian Journal of Public Administration, 64*(2), 27-30. https://doi.org/10.1111/j.1467-8500.2005.00433.x

Coyne, I. T. (1997). Sampling in qualitative research. Purposeful and theoretical sampling: Merging or clear boundaries? *Journal of Advanced Nursing, 26*(3), 623-630.

Creac'h, Y.-K., & Fan, L. (2008). ASEAN's role in the Cyclone Nargis response: Implications, lessons and opportunities. *Humanitarian Exchange, 41*, 5-7.

Creswell, J. W. (2013). *Qualitative inquiry & research design: Choosing among five approaches.* (3rd ed.) Los Angeles, CA: Sage

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*. (4th ed.) Thousand Oaks, CA: Sage

Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Los Angeles, CA: Sage.

Croco, L. M. (2014). *Improving disaster response collaboration using trans-organization development.* (Doctoral dissertation) Pepperdine University, Malibu, CA

Cropper, S., & Palmer, I. (2008). Change, dynamics, and temporality in inter-organizational relationships. In S. Cropper, C. Huxham, M. Ebers, & P. Smith Ring (Eds.), *The Oxford handbook of inter-organizational relations*. New York, NY: Oxford University Press.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process.* St Leonards, Australia: Allen & Unwin.

Crowe, A. S. (2008). National strike teams: An alternate approach to low probability, high consequence events. *Homeland Security Affairs Journal, 4*(2).

Crowe, A. S. (2013). *Leadership in the open: A new paradigm in emergency management.* Boca Raton, FL: CRC Press.

Cui, P., Chen, X.-Q., Zhu, Y.-Y., Su, F.-H., Wei, F.-Q., Han, Y.-S., . . . Zhuang, J.-Q. (2011). The Wenchuan Earthquake (May 12, 2008), Sichuan Province, China, and resulting geohazards. *Natural Hazards, 56*(1), 19-36. https://doi.org/10.1007/s11069-009-9392-1

Curnin, S., & Owen, C. (2014). Spanning organizational boundaries in emergency management. *International Journal of Public Administration, 37*(5), 259-270. https://doi.org/10.1080/01900692.2013.830625

Cutter, S., Barnes, L., Berry, M., Burton, C., Evans, E., Tate, E., & Webb, J. (2008). A place-based model for understanding community resilience to natural disasters. *Global Environmental Change, 18*(4), 598-606. https://doi.org/10.1016/j.gloenvcha.2008.07.013

Cutter, S. L., Ash, K. D., & Emrich, C. T. (2014). The geographies of community disaster resilience. *Global environmental change-human and policy dinmensions, 29*, 65-77. https://doi.org/10.1016/j.gloenvcha.2014.08.005

Czaja, M. (2015). Wildland fire management: Movement towards enabling resiliency? In A. Masys (Ed.), *Disaster management: Enabling resilience* (pp. 287-315). Cham, Switzerland: Springer.

Czaja, M., & P. Cottrell, S. (2014). Integrating social science research into wildland fire management. *Disaster Prevention and Management, 23*(4), 381-394. https://doi.org/10.1108/DPM-10-2013-0193

Daly, K. J. (2007). *Qualitative methods for family studies and human development.* Los Angeles, CA: Sage

Damanpour, F., & Schneider, M. (2006). Phases of the adoption of innovation in organisations: Effects of environment, organization and top manager. *British Journal of Management, 17*(3), 215-236.

Danielsson, M., & Ohlsson, K. (1999). Decision making in emergency management: A survey study. *International Journal of Cognitive Ergonomics, 3*(2), 91-99. https://doi.org/10.1207/s15327566ijce0302_2

Davies, D., & Dodd, J. (2002). Qualitative research and the question of rigor. *Qualitative Health Research, 12*(2), 279-289. https://doi.org/10.1177/104973230201200211

Davies, R. (2015). Malaysia floods-Kelantan flooding worst recorded as costs rise to RM 1 billion. Retrieved from http://floodlist.com/asia/malaysia-floods-kelantan-worst-recorded-costs

De Meuse, K. (2009). *Driving team effectiveness: A comparative analysis of the Korn/Ferry T7 model with other popular team models*. Minneapolis, MN: Korn/Ferry Institute. Retrieved from https://www.kornferry.com/media/lominger_pdf/teamswhitepaper080409.pdf

Delaney, F. G. (1994). Making connections: Research into intersectoral collaboration. *Health Education Journal, 53*(4), 474-485. https://doi.org/10.1177/001789699405300411

Demiroz, F., & Kapucu, N. (2012). The role of leadership in managing emergencies and disasters. *European Journal of Economic and Political Studies, 5*(1), 91-101.

Denzin, N. K., & Lincoln, Y. S. (2011). *The Sage handbook of qualitative research* (4th ed.). Thousand Oaks, CA: Sage

Dhimal, M., & Karki, K. B. (2014). The hidden burden of neglected tropical diseases: A call for inter-sectoral collaboration in Nepal. *Journal of Nepal Health Research Council, 12*(3), II-IV.

Dillenbourg, P., Baker, M., Blaye, M., & O'Malley, C. E. (1996). The evolution of research on collaborative learning. In E. Spade & P. Reiman (Eds.), *Learning in humans and machine: Towards an interdisciplinary learning science* (pp. 189-211). Oxford, United Kingdom: Elsevier.

Dilley, P. (2000). Conducting successful interviews: Tips for intrepid research. *Theory Into Practice, 39*(3), 131-137. https://doi.org/10.1207/s15430421tip3903_3

Dimancescu, D., & Botkin, J. (1986). *The new alliance: America's R&D consortia*. Cambridge, MA: Ballinger.

Disaster preparedness, management top priorities for Malaysia. (2017, September 11). *The Sun Daily*. Retrieved from http://www.thesundaily.my/news/2017/09/11/disaster-preparedness-management-top-priorities-malaysia

Djalante, R. (2012). Review Article: Adaptive governance and resilience: The role of multi-stakeholder platforms in disaster risk reduction. *Natural Hazards and Earth System Sciences, 12*(9), 2923-2942.

Dodgson, M. (1993). Learning, trust, and technological collaboration. *Human Relations, 46*(1), 77-95.

Donahue, A., & Tuohy, R. (2006). Lessons we don't learn: A study of the lessons of disasters, why we repeat them, and how we can learn them. *Homeland Security Affairs, 2*(4), 1-28.

Doyle, E. E. H., Johnston, D. M., Smith, R., & Paton, D. (2019). Communicating model uncertainty for natural hazards: A qualitative systematic thematic review. *International Journal of Disaster Risk Reduction, 33*, 449-476. https://doi.org/10.1016/j.ijdrr.2018.10.023

Doz, T., & Baburoglu, O. (2000). From competition to collaboration. In D. Faulkner & M. D. Rond (Eds.), *Cooperative strategy: economic, business and organizational issues* (pp. 173-192). New York, NY: Oxford University Press.

Drabek, T. E., & McEntire, D. A. (2002). Emergent phenomena and multiorganizational coordination in disasters: Lessons from the research literature. *International Journal of Mass Emergencies and Disasters, 20*(2), 197-224.

Drabek, T. E., & McEntire, D. A. (2003). Emergent phenomena and the sociology of disaster: Lessons, trends and opportunities from the research literature. *Disaster Prevention and Management: An International Journal, 12*(2), 97-112. https://doi.org/10.1108/09653560310474214

Draucker, C. B., Martsolf, D. S., Ross, R., & Rusk, T. B. (2007). Theoretical sampling and category development in grounded theory. *Qualitative Health Research, 17*(8), 1137-1148. https://doi.org/10.1177/1049732307308450

Dynes, R. (1994). Community emergency planning: False assumptions and inappropriate analogies. *International Journal of Mass Emergencies and Disasters, 12*(2), 141-158.

ECOSOC. (2019). *Strengthening of the coordination of emergency humanitarian assistance of the United Nations-Report of the Secretary-General*. New York, NY: United Nations.

Edmonds, K. (2013). Beyond good intentions: The structural limitations of NGOs in Haiti. *Critical Sociology, 39*(3), 439-452. https://doi.org/10.1177/0896920512437053

Edvardsson, B., Tronvoll, B., & Gruber, T. (2011). Expanding understanding of service exchange and value co-creation: A social construction approach. *Journal of the Academy of Marketing Science, 39*(2), 327-339. https://doi.org/10.1007/s11747-010-0200-y

Eikenberry, A. M., Arroyave, V., & Cooper, T. (2007). Administrative failure and the international NGO response to Hurricane Katrina. *Public Administration Review, 67*(1), 160-170.

Eisenhardt, K. M. (1989). Building theories from case study research. *The Academy of Management Review, 14*(4), 532-550.

Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *The Academy of Management Journal, 50*(1), 25-32.

Emerson, K., & Nabatchi, T. (2015). *Collaborative governance regimes*. Washington, DC: Georgetown University Press.

Emerson, K., Nabatchi, T., & Balogh, S. (2012). An integrative framework for collaborative governance. *Journal of Public Administration Research and Theory, 22*(1), 1-29.

Emrich, C. T., & Cutter, S. L. (2011). Social vulnerability to climate-sensitive hazards in the southern United States. *Weather, Climate, and Society, 3*(3), 193-208. https://doi.org/10.1175/2011WCAS1092.1

Erakovich, R., & Anderson, T. (2013). Cross-sector collaboration: Management decision and change model. *International Journal of Public Sector Management, 26*(2), 163-173. https://doi.org/10.1108/09513551311318031

Ergun, Ö., Keskinocak, P., & Swann, J. (2011). Introduction to the special issue on humanitarian applications: Doing good with good OR. *Interfaces, 41*(3), 215-222. https://doi.org/10.1287/inte.1110.0578

Evans, T. S., Lambiotte, R., & Panzarasa, P. (2011). Community structure and patterns of scientific collaboration in Business and Management. *Scientometrics, 89*(1), 381-396. https://doi.org/10.1007/s11192-011-0439-1

Faraj, S., & Xiao, Y. (2006). Coordination in fast-response organizations. *Management Science, 52*(8), 1155-1169. https://doi.org/10.1287/mnsc.1060.0526

Farazmand, A. (2007). Learning from the Katrina crisis: A global and international perspective with implications for future crisis management. *Public Administration Review, 67*(1), 149-159. https://doi.org/10.1111/j.1540-6210.2007.00824.x

Feldmann-Jensen, S., Jensen, S. J., Smith, S. M., & Vigneaux, G. (2019). The next generation core competencies for emergency management. *Journal of Emergency Management, 17*(1), 17-25.

FEMA. (2010). Comprehensive Preparedness Guide (CPG) 101: Developing and maintaining emergency operations plans. Retrieved from http://www.fema.gov/media-library-data/20130726-1828-25045-0014/cpg_101_comprehensive_preparedness_guide_developing_and_maintaining_emergency_operations_plans_2010.pdf

Ferlie, E. (1996). *The new public management in action*. New York, NY: Oxford University Press.

Ferris, J. M. (1993). The double-edged sword of social service contracting: Public accountability versus nonprofit autonomy. *Nonprofit Management & Leadership, 3*(4), 363-376.

Fisk, J. M., Good, A. J., & Nelson, S. (2019). Collaboration after disaster: Explaining intergovernmental collaboration during the EPA Gold King Mine and TVA Coal Ash recoveries. *Risk, Hazards & Crisis in Public Policy, 10*(1), 52-73. https://doi.org/10.1002/rhc3.12156

Fjeldstad, Ø. D., Snow, C. C., Miles, R. E., & Lettl, C. (2012). The architecture of collaboration. *Strategic Management Journal, 33*(6), 734-750. https://doi.org/10.1002/smj.1968

Fleming, C. J., McCartha, E. B., & Steelman, T. A. (2015). Conflict and collaboration in wildfire management: The role of mission alignment. *Public Administration Review, 75*(3), 445-454. https://doi.org/10.1111/puar.12353

Flood woes require innovative solutions. (2017, January 8). *Sunday Star*. Retrieved from https://www.thestar.com.my/opinion/columnists/the-star-says/2017/01/08/flood-woes-require-innovative-solutions

Forrer, J. J., Kee, J. E. J., & Boyer, E. (2014). Managing cross-sector collaboration. *The Public Manager, 43*(4), 42.

Fosler, R. S. (2002). *Working better together: How government, business, and nonprofit organizations can achieve public purposes through cross-sector collaboration, alliances, and partnerships: Executive summary*. Washington, DC: Independent Sector.

Foster-Fishman, P. G., Salem, D. A., Allen, N. A., & Fahrbach, K. (2001). Facilitating interorganizational collaboration: The contributions of interorganizational alliances. *American Journal of Community Psychology, 29*(6), 875-905. https://doi.org/10.1023/A:1012915631956

Foster, M. K., & Meinhard, A. G. (2002). A regression model explaining predisposition to collaborate. *Nonprofit and Voluntary Sector Quarterly, 31*(4), 549-564. https://doi.org/10.1177/0899764002238100

Foster, P., Hammersley, M., & Gomm, R. (2013). *Case study method: Key issues, key texts*: Sage

Freeman, M. C., Ogden, S., Jacobson, J., Abbott, D., Addiss, D. G., Amnie, A. G., . . . Utzinger, J. (2013). Integration of water, sanitation, and hygiene for the prevention and control of neglected tropical diseases: A rationale for inter-sectoral collaboration. *PLoS Neglected Tropical Diseases, 7*(9), 2439-2459. https://doi.org/10.1371/journal.pntd.0002439

Fritz, H. M., Blount, C. D., Thwin, S., Thu, M. K., & Chan, N. (2009). Cyclone Nargis storm surge in Myanmar. *Nature Geoscience, 2*(7), 448-449.

Fuller, M., & Goriunova, O. (2014). Phrase. In C. Lury & N. Wakeford (Eds.), *Inventive methods: The happening of the social*. New York, NY: Routledge.

Gajda, R. (2004). Utilizing collaboration theory to evaluate strategic alliances. *American Journal of Evaluation, 25*(1), 65-77. https://doi.org/10.1016/j.ameval.2003.11.002

Gajda, R., & Koliba, C. (2007). Evaluating the imperative of intraorganizational collaboration: A school improvement perspective. *American Journal of Evaluation, 28*(1), 26-44. https://doi.org/10.1177/1098214006296198

Gajda, R., & Koliba, C. J. (2008). Evaluating and omproving the quality of teacher collaboration: A field-tested framework for secondary school leaders. *NASSP Bulletin, 92*(2), 133-153. https://doi.org/10.1177/0192636508320990

Gallant, M. H., Beaulieu, M. C., & Carnevale, F. A. (2002). Partnership: An analysis of the concept within the nurse–client relationship. *Journal of Advanced Nursing, 40*(2), 149-157. https://doi.org/10.1046/j.1365-2648.2002.02357.x

Garnett, J. L., & Kouzmin, A. (2007). Communicating throughout Katrina: Competing and complementary conceptual lenses on crisis communication. *Public Administration Review, 67*(1), 171-188. https://doi.org/10.1111/j.1540-6210.2007.00826.x

Gazley, B. (2008). Intersectoral collaboraton and the motivation to collaborate: Toward an integrated theory. In L. B. Bingham & R. O'Leary (Eds.), *Big ideas in collaborative public management* (pp. 36-54). New York, NY: M.E. Sharpe.

Gazley, B. (2017). The current state of interorganizational collaboration: Lessons for human service research and management. *Human Service Organizations: Management, Leadership & Governance, 41*(1), 1-5. https://doi.org/10.1080/23303131.2015.1095582

Gazley, B., & Brudney, J. (2007). The purpose (and perils) of government-nonprofit partnership. *Nonprofit and Voluntary Sector Quarterly, 36*(3), 389-415. https://doi.org/10.1177/0899764006295997

Gjerde, M. (2017). Building back better: Learning from the Christchurch rebuild. *Procedia Engineering, 198*, 530-540. https://doi.org/10.1016/j.proeng.2017.07.108

Glaser, B. G., & Holton, J. (2007). Remodeling grounded theory. *Historical Social Research / Historische Sozialforschung. Supplement, 32*(19), 47-68.

Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory* Chicago, IL: Aldine.

Glaser, B. G., & Strauss, A. L. (2017). *Discovery of grounded theory: Strategies for qualitative research*. London, United Kingdom: Routledge.

Glisson, C., & James, L. (1992). The interorganizational coordination of services to children in state custody. In D. Bargal & H. Schmid (Eds.), *Organizational change and development in human service organizations* (pp. 65-80). New York, NY: Howard Press.

Gnyawali, D. R., & Park, B.-J. (2009). Co-opetition and technological innovation in small and medium-sized enterprises: A multilevel conceptual model. *Journal of Small Business Management, 47*(3), 308-330. https://doi.org/10.1111/j.1540-627X.2009.00273.x

Goldsmith, S., & Eggers, W. (2004). *Governing by network: The new shape of the public sector*. Washington, D.C.: Brookings Institute Press.

Goldstein, B. E., & Butler, W. H. (2009). The network imaginary: Coherence and creativity within a multiscalar collaborative effort to reform US fire management. *Journal of Environmental Planning and Management, 52*(8), 1013-1033.

Gorbiano, M. I. (2019, August 7). Jokowi to visit Malaysia, Singapore as haze crisis returns. *The Jakarta Post*. Retrieved from https://www.thejakartapost.com/news/2019/08/07/jokowi-to-visit-malaysia-singapore-as-haze-crisis-returns.html

Gourlay, C. (2004). European Union procedures and resources for crisis management. *International Peacekeeping, 11*(3), 404-421.

Graham, J. R., & Barter, K. (1999). Collaboration: A social work practice method. *Families in Society: The Journal of Contemporary Social Services, 80*(1), 6-13. https://doi.org/10.1606/1044-3894.634

Gray, B. (1985). Conditions facilitating interorganizational collaboration. *Human Relations, 38*(10), 911-936.

Gray, B. (1989). *Collaborating : Finding common ground for multiparty problems*. San Francisco, CA: Jossey-Bass.

Gray, B., & Purdy, J. (2018). *Collaborating for our future: Multistakeholder partnerships for solving complex problems*. Oxford, United Kingdom: Oxford University Press.

Green, W. G. (2001). *Command and control of disaster operations*. Oxford, United Kingdom: Oxford University Press.

Guba, E. G., & Lincoln, Y. S. (1989). *Fourth generation evaluation*. Newbury Park, CA: Sage

Guba, E. G., Lincoln, Y. S., & Lynham, S. A. (2011). Paradigmatic controversies, contradictions and emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (4th ed.). Thousand Oaks, CA: Sage.

Guha Sapir, D. (2019a). *EM-DAT: The Emergency Events Database - Université Catholique de Louvain (UCL)* Retrieved from https://www.emdat.be/emdat_db/

Guha Sapir, D. (2019b). *Natural disasters 2018 report*. Retrieved from https://www.cred.be/sites/default/files/CREDNaturalDisaster2018.pdf

Guo, X., & Kapucu, N. (2015a). Examining collaborative disaster response in China: Network perspectives. *Natural Hazards, 79*(3), 1773-1789.

Guo, X., & Kapucu, N. (2015b). Network performance assessment for collaborative disaster response. *Disaster Prevention and Management, 24*(2), 201-220. https://doi.org/10.1108/DPM-10-2014-0209

Gupta, S. (2010). *Synthesis report on ten ASEAN countries disaster risks assessment*. Retrieved from http://www.unisdr.org/files/18872_asean.pdf

Haddow, G. D., Bullock, J. A., & Coppola, D. P. (2011). *Introduction to emergency management* (4th ed.). Burlington, MA: Butterworth Heinemann.

Hager, M. A., Galaskiewicz, J., & Larson, J. A. (2004). Structural embeddedness and the liability of newness among nonprofit organizations. *Public Management Review, 6*(2), 159-188. https://doi.org/10.1080/1471903042000189083

Halkier, B. (2011). Methodological practicalities in analytical generalization. *Qualitative Inquiry, 17*(9), 787-797. https://doi.org/10.1177/1077800411423194

Hall, C. M., Malinen, S., Vosslamber, R., & Wordsworth, R. (2016). *Business and post-disaster management: Business, organisational and consumer resilience and the Christchurch earthquakes*. New York, NY: Routledge.

Halvorsen, K., Almklov, P. G., & Gjøsund, G. (2017). Fire safety for vulnerable groups: The challenges of cross-sector collaboration in Norwegian municipalities. *Fire Safety Journal, 92*, 1-8. https://doi.org/10.1016/j.firesaf.2017.05.001

Hardenbrook, B. J. (2005). The need for a policy framework to develop resilient regions. *Journal of Homeland Security and Emergency Management, 2*(3).

Hardy, C., Phillips, N., & Lawrence, T. (2003). Resources, knowledge and influence: The organizational effects of interorganizational collaboration. *Journal of Management Studies, 40*(2), 321-347.

Harré, R., & Bhaskar, R. (2001). How to change reality: Story vs. structure — A debate between Rom Harré and Roy Bhaskar. In J. López & G. Potter (Eds.), *After Postmodernism, an introduction to critical realism*. London, United Kingdom: Continuum.

Hartley, J., & Rashman, L. (2018). Innovation and inter-organizational learning in the context of public service reform. *International Review of Administrative Sciences, 84*(2), 231-248. https://doi.org/10.1177/0020852318762309

Hartwig, M. (2007). Primacy. In M. Hartwig (Ed.), *Dictionary of critical realism* (pp. 376-377). London, United Kingdom: Routledge.

Harvey, M., Griffith, D., & Novicevic, M. (2000). Development of `timescapes' to effectively manage global inter-organizational relational communications. *European Management Journal, 18*(6), 646-662. https://doi.org/10.1016/S0263-2373(00)00056-6

Healey, P. (2006). *Collaborative planning: Shaping places in fragmented societies* (2nd ed.). New York, NY: Palgrave Macmillan.

Hennart, J.-F. (1988). A transaction costs theory of equity joint ventures *Strategic Management Journal (1986-1998), 9*(4), 361-374.

Hermansson, H. (2016). Disaster management collaboration in Turkey: Assessing progress and challenges of hybrid network governance. *Public Administration, 94*(2), 333-349. https://doi.org/10.1111/padm.12203

Hermansson, H. (2017). *Centralized disaster management collaboration in Turkey*. (Doctoral Dissertation). Uppsala University, Sweden.

Hesse-Biber, S. N. (2010). *Mixed methods research: Merging theory with practice*. New York, NY: Guilford Press.

Heywood, A. (2017). *Political ideologies: An introduction* (6th ed.). New York, NY: Palgrave Macmillan

Hickman, G. R. (2004). Invisible leadership. In G. R. Goethals, G. J. Sorenson, & J. M. Burns (Eds.), *Encyclopedia of leadership* (pp. 750-754). Thousand Oaks, CA: Sage

Hill, C. J., & Lynn, L. E. (2005). Is hierarchical governance in decline? Evidence from empirical research. *Journal of Public Administration Research and Theory, 15*(2), 173-195. https://doi.org/10.1093/jopart/mui011

Hodgson, D. E. (2004). Project work: The legacy of bureaucratic control in the post-bureaucratic organization. *Organization, 11*(1), 81-100. https://doi.org/10.1177/1350508404039659

Hollnagel, E. (2015). Disaster management, control, and resilience. In A. Masys (Ed.), *Disaster management: Enabling resilience* (pp. 21-36). Cham. Switzerland: Springer

Holloway, I., & Galvin, K. (2017). *Qualitative research in nursing and healthcare* (4th ed.). Chichester, United Kingdom: John Wiley

Hood, C. (1991). A public management for all seasons? *Public Administration, 69*(1), 3-19. https://doi.org/10.1111/j.1467-9299.1991.tb00779.x

Hood, J. N., Logsdon, J. M., & Thompson, J. K. (1993). Collaboration for social problem solving: A process model. *Business & Society, 32*(1), 1-17. https://doi.org/10.1177/000765039303200103

Horowitz, T., & Camp, J. L. (2006). *The epistemology of a priori knowledge*. New York, NY: Oxford University Press.

Horton, B., Bird, M., Birkland, T., Cowie, S., Eong, O. J., Hawkes, A., . . . Yasin, Z. (2008). Environmental and socioeconomic dynamics of the Indian Ocean tsunami in Penang, Malaysia. *Singapore Journal of Tropical Geography, 29*(3), 307-324. https://doi.org/10.1111/j.1467-9493.2008.00342.x

Hovik, S., & Hanssen, G. S. (2015). The impact of network management and complexity on multi-level coordination. *Public Administration, 93*(2), 506-523. https://doi.org/10.1111/padm.12135

Hutter, G. (2016). Collaborative governance and rare floods in urban regions: Dealing with uncertainty and surprise. *Environmental Science and Policy, 55*, 302-308. https://doi.org/10.1016/j.envsci.2015.07.028

Huxham, C. (1996). *Creating collaborative advantage*. Thousand Oaks, CA: Sage

Huxham, C., & Vangen, S. (2005). *Managing to collaborate: The theory and practice of collaborative advantage*. New York, NY: Routledge.

Huy, Q. N. (2012). Improving the odds of publishing inductive qualitative research in premier academic journals. *The Journal of Applied Behavioral Science, 48*(2), 282-287. https://doi.org/10.1177/0021886312438864

IASC. (2010). Response to the humanitarian crisis in Haiti: Achievements, challenges and lessons to be learned. International Committee of the Red Cross (2008) 'ICRC Protection Policy'. International Review of the Red Cross, 90(871)

Idris, A., & Nizam Che Soh, S. (2014). Determinants of HADR mission success: Exploring the experience of the Malaysian army. *Disaster Prevention and Management, 23*(4), 455-468. https://doi.org/10.1108/DPM-01-2013-0003

IFRC. (2014, December 28). *Information bulletin: Malaysia: Seasonal floods 2014*. Kuala Lumpur: Retrieved from https://reliefweb.int/sites/reliefweb.int/files/resources/IBMYfl281214.pdf

IFRC. (2015). *ICRC 32nd International Conference of the Red Cross and Red Crescent: Resolutions, bulletins and reports*. Retrieved from https://www.unisdr.org/we/inform/events/46853

IFRC. (2016). Types of disasters: Definition of hazard. Retrieved from http://www.ifrc.org/en/what-we-do/disaster-management/about-disasters/definition-of-hazard/

Ikeda, S., Sato, T., & Fukuzono, T. (2008). Towards an integrated management framework for emerging disaster risks in Japan. *Natural Hazards, 44*(2), 267-280. https://doi.org/10.1007/s11069-007-9124-3

Imperial, M. (2005). Using collaboration as a governance strategy: Lessons from six watershed management programs. *Administration & Society, 37*(3), 281-319.

Imperiale, A. J., & Vanclay, F. (2019). Command-and-control, emergency powers, and the failure to observe United Nations disaster management principles following the 2009 L'Aquila earthquake. *International Journal of Disaster Risk Reduction, 36*, 101099. https://doi.org/10.1016/j.ijdrr.2019.101099

Innes, J. E., & Booher, D. E. (2010). *Planning with complexity: An introduction to collaborative rationality for public policy*. New York, NY: Routledge.

Ismail, H., Abd Wahab, A. K., Mohd Amin, M. F., Mohd Yunus, M. Z., Jaffar Sidek, F., & Esfandier J, B. (2012). A 3-tier tsunami vulnerability assessment technique for the north-west coast of Peninsular Malaysia. *Natural Hazards, 63*(2), 549-573. https://doi.org/10.1007/s11069-012-0166-9

James, K. (2011). The organizational science of disaster/terrorism prevention and response: Theory-building toward the future of the field. *Journal of Organizational Behavior, 32*(7), 1013-1032.

Jann, W. (2016). Accountability, performance and legitimacy. In T. Christensen & P. Lægreid (Eds.), *The Routledge handbook on accountability and welfare state reforms in Europe*. London, United Kingdom: Routledge.

Janssen, M., Lee, J., Bharosa, N., & Cresswell, A. (2010). Advances in multi-agency disaster management: Key elements in disaster research. *Information Systems Frontiers, 12*(1), 1-7. https://doi.org/10.1007/s10796-009-9176-x

Jennifer, D. P. M. (2013). Designing collaborative processes for adaptive management: Four structures for multistakeholder collaboration. *Ecology and Society, 18*(4), 5. https://doi.org/10.5751/ES-05709-180405

Jensen, S. J., Feldmann-Jensen, S., Johnston, D. M., & Brown, N. A. (2015). The emergence of a globalized system for disaster risk management and challenges for appropriate governance. *International Journal of Disaster Risk Science, 6*(1), 87-93. https://doi.org/10.1007/s13753-015-0043-8

Jentoft, S., & Chuenpagdee, R. (2009). Fisheries and coastal governance as a wicked problem. *Marine Policy, 33*(4), 553-560.

Jha, M. K. (2009). *Natural and anthropogenic disasters: An overview*. New Delhi, India: Springer.

Jha, M. K. (2010). Natural and anthropogenic disasters: An overview. In M. K. Jha (Ed.), *Natural and anthropogenic disasters* (pp. 1-16). Dordrecht, The Netherlands: Springer.

Jing, Y., & Besharov, D. J. (2014). Collaboration among government, market, and society: Forging partnerships and encouraging competition. *Journal of Policy Analysis and Management, 33*(3), 835-842. https://doi.org/10.1002/pam.21772

Johnson, B. J., Goerdel, H. T., Lovrich, N. P., & Pierce, J. C. (2015). Social capital and emergency management planning: A test of community context effects on formal and informal collaboration. *American Review of Public Administration, 45*(4), 476-493. https://doi.org/10.1177/0275074013504127

Johnston, D. M., Becker, J., McClure, J., Paton, D., McBride, S., Wright, K., . . . Hughes, M. (2013). Community understanding of, and preparedness for, earthquake and tsunami risk in Wellington, New Zealand. In (2013 ed., Vol. 33, pp. 131-148). Dordrecht, The Netherlands: Springer

Kachali, H., Storsjö, I., Haavisto, I., & Kovács, G. (2018). Inter-sectoral preparedness and mitigation for networked risks and cascading effects. *International Journal of Disaster Risk Reduction, 30*, 281-291. https://doi.org/10.1016/j.ijdrr.2018.01.029

Kahan, J. H., Allen, A. C., & George, J. K. (2009). An operational framework for resilience. *Journal of Homeland Security and Emergency Management, 6*(1).

Kamensky, J. M., & Burlin, T. J. (2004). *Collaboration: Using networks and partnerships*. Lanham, MA: Rowman & Littlefield.

Kamensky, J. M., Burlin, T. J., & Abramson, M. A. (2004). Networks and partnerships: Collaborating to achieve results no one can achieve alone. In J. M. Kamensky & T. J. Burlin (Eds.), *Collaboration: Using networks and partnerships* (pp. 3-20). Lanham, MA: Rowman & Littlefield

Kaniewski, D. J. (2011). *The federal response to Hurricane Katrina: Lessons learned or lessons observed?* (Doctoral Dissertation). George Washington University, Washngton, DC

Kaos, J. J. (2015, September 2). Government sets up new national disaster management agency. *The Star Online*. Retrieved from http://www.thestar.com.my/news/nation/2015/09/02/government-new-agency/

Kappes, M. S., Keiler, M., von Elverfeldt, K., & Glade, T. (2012). Challenges of analyzing multi-hazard risk: A review. *Natural Hazards, 64*(2), 1925-1958. https://doi.org/10.1007/s11069-012-0294-2

Kapucu, N. (2005). States use EMAC (Emergency Management Association Compact) in response to 2004 Florida Hurricanes. *Public Administration Times, 28*(4), 3-5.

Kapucu, N. (2008). Collaborative emergency management: Better community organising, better public preparedness and response. *Disasters, 32*(2), 239-262.

Kapucu, N. (2009). Interorganizational coordination in complex environments of disasters: The evolution of intergovernmental disaster response systems. *Journal of Homeland Security and Emergency Management, 6*(1).

Kapucu, N. (2015). Leadership and collaborative governance in managing emergencies and crises. In F. P. Urbano (Ed.), *Risk Governance: The Articulation of Hazard, Politics and Ecology* (pp. 211-235). Dordrecht, The Netherlands: Springer.

Kapucu, N., Arslan, T., & Collins, M. L. (2010). Examining intergovernmental and interorganizational response to catastrophic disasters: Toward a network-centered approach. *Administration & Society, 42*(2), 222-247. https://doi.org/10.1177/0095399710362517

Kapucu, N., Arslan, T., & Demiroz, F. (2010). Collaborative emergency management and national emergency management network. *Disaster Prevention and Management: An International Journal, 19*(4), 452-468. https://doi.org/10.1108/09653561011070376

Kapucu, N., Augustin, M.-E., & Garayev, V. (2009). Interstate partnerships in emergency management: Emergency management assistance compact in response to catastrophic disasters. *Public Administration Review, 69*(2), 297-313.

Kapucu, N., & Garayev, V. (2011). Collaborative decision-making in emergency and disaster management. *International Journal of Public Administration, 34*(6), 366-375. https://doi.org/10.1080/01900692.2011.561477

Kapucu, N., & Garayev, V. (2013). Designing, managing, and sustaining functionally collaborative emergency management networks. *The American Review of Public Administration, 43*(3), 312-330.

Kapucu, N., & Garayev, V. (2014). Structure and network performance: Horizontal and vertical networks in emergency management. *Administration & Society, 48*(8), 931-961. https://doi.org/10.1177/0095399714541270

Kapucu, N., Garayev, V., & Wang, X. (2013). Sustaining networks in emergency management. *Public Performance & Management Review, 37*(1), 104-133. https://doi.org/10.2753/PMR1530-9576370105

Karam, M., Brault, I., Van Durme, T., & Macq, J. (2018). Comparing interprofessional and interorganizational collaboration in healthcare: A systematic review of the qualitative research. *International Journal of Nursing Studies, 79*, 70-83. https://doi.org/10.1016/j.ijnurstu.2017.11.002

Karan, P. P., Subbiah, S. P., & Gilbreath, D. (2011). *The Indian Ocean tsunami: The global response to a natural disaster.* Lexington, KY: University Press of Kentucky.

Kaye, A. (1992). Learning together apart. In A. Kaye (Ed.), *In collaborative learning through computer conferencing* (pp. 1-23). Berlin, Germany: Springer-Verlag.

Kellogg, K. C., Orlikowski, W. J., & Yates, J. (2006). Life in the trading zone: Structuring coordination across boundaries in postbureaucratic organizations. *Organization Science, 17*(1), 22-44. https://doi.org/10.1287/orsc.1050.0157

Kenis, P. N., & Provan, K. G. (2009). Towards an exogenous theory of public network performance. *Public Administration, 87*(3), 440-456. https://doi.org/10.1111/j.1467-9299.2009.01775.x

Kerajaan tubuh agensi pengurusan bencana Malaysia (Government establishes national disaster management agency). (2015, September 2). *Sinar Online*. Retrieved from http://www.sinarharian.com.my/nasional/kerajaan-tubuh-agensi-pengurusan-bencana-negara-1.426436

Kettl, D. F. (2005). *The global public management revolution* (2nd ed.). Washington, D.C: Brookings Institution Press.

Kettl, D. F. (2006). Is the worst yet to come? *Annals of the American Academy of Political and Social Science, 604*, 273-287. https://doi.org/10.1177/0002716206285981

Keyton, J., Ford, D. J., & Smith, F. I. (2008). A mesolevel communicative model of collaboration. *Communication Theory, 18*, 376-406.

Khan, A., Khan, H., & Vasilescu, L. (2008). Disaster management cycle – A theoretical approach. *Management & Marketing* 43-50.

Khanna, T., Gulati, R., & Nohria, N. (2000). The economic modeling of strategy process: 'Clean models' and 'dirty hands'. *Strategic Management Journal, 21*(7), 781-790. https://doi.org/10.1002/1097-0266(200007)21:7

Kinsman, J., Angrén, J., Elgh, F., Furberg, M., Mosquera, P. A., Otero-García, L., . . . Tsolova, S. (2018). Preparedness and response against diseases with epidemic potential in the European Union: A qualitative case study of Middle East Respiratory

Syndrome (MERS) and poliomyelitis in five member states. *BMC Health Services Research, 18*(1), 528-538.

Klijn, E.-H., & Koppenjan, J. (2006). Public management and policy networks: Foundations of a network approach to governance. *Public Management Review, 2*(2), 135-158.

Klijn, E.-H., & Skelcher, C. (2007). Democracy and governance networks: Compatible or not? *Public Administration, 85*(3), 587-608. https://doi.org/10.1111/j.1467-9299.2007.00662.x

Knight, K. (2013). *Facing the future: Findings from the review of efficiencies and operations in fire and rescue authorities in England*. London: HSMO.

Koppenjan, J. F., & Klijn, E.-H. (2004). *Managing uncertainty in networks: A network approach to problem solving and decision making*. New York, NY: Routledge.

Kozuch, B., & Sienkiewicz-Malyjurek, K. (2016). Inter-organisational coordination for sustainable local governance: Public safety management in Poland. *Sustainability (Switzerland), 8*(2), 123. https://doi.org/10.3390/su8020123

Kuipers, S., Yesilkagit, K., & Carroll, B. (2018). Coming to terms with termination of public organizations. *Public Organization Review, 18*(2), 263-278. https://doi.org/10.1007/s11115-017-0376-4

Kuzel, A. (1992). Sampling in qualitative inquiry. In B. F. Crabtree & W. L. Miller (Eds.), *Doing qualitative research* (pp. 31-44). Thousand Oaks, CA: Sage

Kvale, S. (2007). *Doing interviews*. London, United Kingdom: Sage.

Kwok, A. H., Doyle, E. E. H., Becker, J., Johnston, D., & Paton, D. (2016). What is 'social resilience'? Perspectives of disaster researchers, emergency management practitioners, and policymakers in New Zealand. *International Journal of Disaster Risk Reduction, 19*, 197-211. https://doi.org/10.1016/j.ijdrr.2016.08.013

Lai, A. Y.-H. (2011). Organizational collaborative capacities in disaster management: Evidence from the Taiwan Red Cross organization. *Asian Journal of Social Science, 39*(4), 446-468.

Lanir, Z. (1983). *Fundamental surprises*. Tel Aviv, Israel: Center for Strategic Studies, University of Tel Aviv.

Larsson, R., Bengtsson, L., Henriksson, K., & Sparks, J. (1998). The interorganizational learning dilemma: Collective knowledge development in strategic alliances. *Organization Science, 9*(3), 285-305. https://doi.org/10.1287/orsc.9.3.285

Latour, B., & Woolgar, S. (1979). *Laboratory life: The construction of scientific facts*. Beverley Hills, CA: Sage.

Latsis, J., Martins, N., & Lawson, C. (2007). Introduction: Ontology, philosophy, and the social sciences. In J. Latsis, N. Martins, & C. Lawson (Eds.), *Contributions to social ontology*. New York, NY: Routledge.

Leavy, P. (2014). *The Oxford handbook of qualitative research* New York, NY: Oxford University Press.

LeCompte, M. D., & Schensul, J. J. (2010). *Designing and conducting ethnographic research: An introduction* (Vol. 1). Walnut Creek, CA: Rowman Altamira.

Lee, S. (2019, February 9,). Disaster management teams must always be ready. *The Star Online*. Retrieved from https://www.thestar.com.my/news/nation/2019/02/09/disaster-management-teams-must-always-be-ready/

Leech, N. L., & Onwuegbuzie, A. J. (2008). Qualitative data analysis: A compendium of techniques and a framework for selection for school psychology research and beyond. *School Psychology Quarterly, 23*(4), 587-604. https://doi.org/10.1037/1045-3830.23.4.587

Levitt, J. I., & Whitaker, M. C. (2009). *Hurricane Katrina: America's unnatural disaster*. Lincoln, NB: University of Nebraska Press.

Lewin, A. Y., Weigely, C. B., & Emery, J. D. (2004). Adaptation and selection in strategy and change. In M. S. Poole & A. H. Van de Ven (Eds.), *Handbook of organizational change and innovation*. Oxford, United Kingdom: Oxford University Press.

Li, B., Huikuri, S., Zhang, Y., & Chen, W. (2015). Motivating intersectoral collaboration with the Hygienic City Campaign in Jingchang, China. *Environment & Urbanization, 27*(1), 285-302. https://doi.org/10.1177/0956247814565567

Liamputtong, P. (2013). *Qualitative research methods* (4th ed.). Victoria, Australia: Oxford University Press.

Liamputtong, P., & Ezzy, D. (2005). *Qualitative research methods* (2nd ed.). Melbourne, Australia: Oxford University Press.

Liao, D. Z. (2012). A review of the key legal dynamics of Chinese military involvement in domestic disaster relief (MI/DDR). *Journal of Homeland Security and Emergency Management, 9*(1).

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage

Linden, R. M. (2003). *Working across boundaries: Making collaboration work in government and nonprofit organizations*. San Francisco, CA: Wiley

Lodge, M., & Wegrich, K. (2014). *The problem-solving capacity of the modern state*. Oxford, United Kingdom: Oxford University Press.

Longoria, R. A. (2005). Is inter-organizational collaboration always a good thing? *Journal of Sociology and Social Welfare, 32*(3), 123-138.

Lu, Y., & Xu, J. (2014). The progress of emergency response and rescue in China: A comparative analysis of Wenchuan and Lushan earthquakes. *Natural Hazards, 74*(2), 421-444. https://doi.org/10.1007/s11069-014-1191-7

Luo, Y. (2007). A coopetition perspective of global competition. *Journal of World Business, 42*(2), 129-144. https://doi.org/10.1016/j.jwb.2006.08.007

Luo, Y., Huang, Y., & Wang, S. L. (2012). Guanxi and organizational performance: A meta‑analysis. *Management and Organization Review, 8*(1), 139-172. https://doi.org/10.1111/j.1740-8784.2011.00273.x

Lyden, F. J. (1974). How bureaucracy responds to crisis. *Public Administration Review, 34*(6), 597-599. https://doi.org/10.2307/974358

Lynn, L. E., Heinrich, C. J., & Hill, C. J. (2001). *Improving governance: A new logic for empirical research*. Washington, D.C: Georgetown University Press.

Majchrzak, A., Jarvenpaa, S. L., & Bagherzadeh, M. (2015). A review of interorganizational collaboration dynamics. *Journal of Management, 41*(5), 1338-1360.

Majchrzak, A., Philip, H. B. M., & Faraj, S. (2012). Transcending knowledge differences in cross-functional teams. *Organization Science, 23*(4), 951-970. https://doi.org/10.1287/orsc.1110.0677

Majlis Keselamatan Negara (Malaysia National Security Council). (2019). History. Retrieved from https://www.mkn.gov.my/page/sejarah

Malaysian government under fire for flood response. (2014). *The Guardian*. Retrieved from https://www.theguardian.com/world/2014/dec/27/malaysian-government-under-fire-for-flood-response

Malešič, M. (2015). The impact of military engagement in disaster management on civil–military relations. *Current Sociology, 63*(7), 980-998. https://doi.org/10.1177/0011392115577839

Mandell, M. (2001). *Getting results through collaboration: Networks and network structures for public policy and management*. Westport, CT: Quorum Books.

Mandell, M., & Keast, R. (2007). Evaluating network arrangements: Toward revised performance measures. *Public Performance & Management Review, 30*(4), 574-597. https://doi.org/10.2753/PMR1530-9576300406

Mann, M. L., Batllori, E., Moritz, M. A., Waller, E. K., Berck, P., Flint, A. L., . . . Dolfi, E. (2016). Incorporating anthropogenic influences into fire probability models: Effects of human activity and climate change on fire activity in California. *PLoS ONE, 11*(4), e0153589-e0153589. https://doi.org/10.1371/journal.pone.0153589

Manolov, R., & Moeyaert, M. (2016). Recommendations for choosing single-case data analytical techniques. *Behavior Therapy, 48*(1), 97-114. https://doi.org/10.1016/j.beth.2016.04.008

Margerum, R. D. (2002). Collaborative planning: Building consensus and building a distinct model for practice. *Journal of Planning Education and Research, 21*(3), 237-253.

Marks, M. A., Mathieu, J. E., & Zaccaro, S. J. (2001). A temporally based framework and taxonomy of team processes. *Academy of Management Review, 26*(3), 356-376. https://doi.org/10.5465/AMR.2001.4845785

Mathbor, G. M. (2007). Enhancement of community preparedness for natural disasters: The role of social work in building social capital for sustainable disaster relief and management. *International Social Work, 50*(3), 357-369. https://doi.org/10.1177/0020872807076049

McCann, J. E. (1983). Design guidelines for social problem-solving interventions. *The Journal of Applied Behavioral Science, 19*(2), 177-189. https://doi.org/10.1177/002188638301900213

McChrystal, S., Fussell, C., Collins, T., & Silverman, D. (2015). *Team of teams: New rules of engagement for a complex world*. New York, NY: Portfolio/Penguin

McEntire, D. (2004, June). The status of emergency management theory: Issues, barriers, and recommendations for improved scholarship. Paper presented at the FEMA Higher Education Conference. Emmitsburg, MD., USA

McGuire, M. (2006). Collaborative public management: Assessing what we know and how we know it. *Public Administration Review, 66*(1), 33-43. https://doi.org/10.1111/j.1540-6210.2006.00664.x

McGuire, M., & Silvia, C. (2010). The effect of problem severity, managerial and organizational capacity, and agency structure on intergovernmental collaboration: Evidence from local emergency management. *Public Administration Review, 70*(2), 279-288.

McLennan, B. J., & Handmer, J. (2012). Reframing responsibility-sharing for bushfire risk management in Australia after Black Saturday. *Environmental Hazards, 11*(1), 1-15. https://doi.org/10.1080/17477891.2011.608835

McLoughlin, D. (1985). A framework for integrated emergency management. *Public Administration Review, 45*, 165-172. https://doi.org/10.2307/3135011

Meyerson, D., Weick, K. E., & Kramer, R. M. (1996). *Swift trust and temporary groups*. Thousand Oaks, CA.: Sage.

Middleton, R. (2015, 13 June 2015). Borneo earthquake: 5.2 tremor hots the area of Ranau again. *International Business Times.* Retrieved from http://www.ibtimes.co.uk/borneo-earthquake-5-2-tremour-hits-area-ranau-again-1505923

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Thousand Oaks, CA: Sage.

Miller, D. S., Pavelchak, M., Burnside, R., & Rivera, J. (2008). Responding to natural disasters: An increased military response and its impact on public policy administration. In J. Pinkowski (Ed.), *Disaster management handbook* (pp. 401-412). Boca Raton, FL: CRC Press.

Miller, W. L., & Crabtree, B. F. (2005). Clinical research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed.). Thousand Oaks, CA: Sage.

Mills, A. J., Durepos, G., & Wiebe, E. (2010). *Encyclopedia of case study research*. Los Angeles, CA: Sage.

Milway, K. S., & Saxton, A. (2011). The challenge of organizational learning. *Stanford Social Innovation Review, 9*(3), 44-49.

Minamoto, Y. (2010). Social capital and livelihood recovery: Post-tsunami Sri Lanka as a case. *Disaster Prevention and Management: An International Journal, 19*(5), 548-564. https://doi.org/10.1108/09653561011091887

Mohamed Shaluf, I., & Ahmadun, F. l.-R. (2006). Disaster types in Malaysia: An overview. *Disaster Prevention and Management: An International Journal, 15*(2), 286-298. https://doi.org/10.1108/09653560610659838

Mohd Yassin, M. (2015, March 15). Official statement of Malaysia Government in the 3rd United Nations World Conference on Disaster Risk Reduction. Retrieved from http://www.preventionweb.net/files/globalplatform/ministerialstatementmalaysiafinalre.pdf

Mokhtar, M. (2015). *The real reason for the Kelantan floods* [Press release]. Retrieved from https://www.malaysia-today.net/2015/01/04/the-real-reason-for-the-kelantan-floods/

Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing, 58*(3), 20-38.

Moshtari, M., & Gonçalves, P. (2017). Factors influencing interorganizational collaboration within a disaster relief context. *Voluntas: International Journal of Voluntary and Nonprofit Organizations, 28*(4), 1673-1694. https://doi.org/https://doi.org/10.1007/s11266-016-9767-3

Moynihan, D. P. (2009). The network governance of crisis response: Case studies of incident command systems. *Journal of Public Administration Research and Theory, 19*(4), 895-915. https://doi.org/10.1093/jopart/mun033

Mukhopadhyay, A. K. (2005). *Crisis and disaster management turbulence and aftermath*. New Delhi, India: New Age International

Murphy, F. J., & Yielder, J. (2009). Establishing rigour in qualitative radiography research. *Radiography, 16*(1), 62-67. https://doi.org/10.1016/j.radi.2009.07.003

NADMA. (2015). The responsibilities of Malaysian National Disaster Management Agency (NADMA). Retrieved from http://portalbencana.ndcc.gov.my/Portal/Board/Detail?board=138&entity=7507

Nilakant, V., Walker, B., Van Heugten, K., Baird, R., & De Vries, H. (2014). Conceptualising adaptive resilience using grounded theory. *New Zealand Journal of Employment Relations, 39*(1), 79-86.

Nohrstedt, D. (2013). Explaining mobilization and performance of collaborations in routine emergency management. *Administration & Society, 48*(2), 135-162.

Nohrstedt, D. (2015). Does adaptive capacity influence service delivery? Evidence from Swedish emergency management collaborations. *Public Management Review, 17*(5), 718-735. https://doi.org/10.1080/14719037.2013.848921

Nooteboom, B. (2004). Governance and competence: How can they be combined? *Cambridge Journal of Economics, 28*(4), 505-525. https://doi.org/10.1093/cje/28.4.505

Nooteboom, B. (2008). Learning and innovation in inter-organizational relationships. In S. Cropper, C. Huxham, M. Ebers, & P. Smith Ring (Eds.), *The Oxford handbook of inter-organizational relationships*. New York, NY: Oxford University Press.

Noran, O. (2014). Collaborative disaster management: An interdisciplinary approach. *Computers in Industry, 65*(6), 1032-1040.

Norio, O., Ye, T., Kajitani, Y., Shi, P., & Tatano, H. (2011). The 2011 eastern Japan great earthquake disaster: Overview and comments. *International Journal of Disaster Risk Science, 2*(1), 34-42. https://doi.org/10.1007/s13753-011-0004-9

O'Leary, R., & Bingham, L. B. (2007). Conclusion: Conflict and collaboration in networks. *International Public Management Journal, 10*(1), 103-109. https://doi.org/10.1080/10967490601185799

O'Toole, J. L. J., Meier, K. J., & Nicholson-Crotty, S. (2005). Managing upward, downward and outward: Networks, hierarchical relationships and performance. *Public Management Review, 7*(1), 45-68. https://doi.org/10.1080/1471903042000339419

O'Leary, R., & Vij, N. (2012). Collaborative public management: Where have we been and where are we going? *American Review of Public Administration, 42*(5), 507-522. https://doi.org/10.1177/0275074012445780

OCHA. (2012). *OCHA on message: Humanitarian principles*. Retrieved from https://www.unocha.org/sites/dms/Documents/OOM-humanitarianprinciples_eng_June12.pdf

OCHA. (2019). Humanitarian coordination leadership. Retrieved from https://www.unocha.org/our-work/coordination/humanitarian-coordination-leadership

Oh, N., Okada, A., & Comfort, L. K. (2014). Building collaborative emergency management systems in northeast Asia: A comparative analysis of the roles of international agencies. *Journal of Comparative Policy Analysis: Research and Practice, 16*(1), 94-111. https://doi.org/10.1080/13876988.2013.863639

Okhuysen, G. A., & Bechky, B. A. (2009). Coordination in organizations: An integrative perspective. *Academy of Management Annals, 3*, 463-502. https://doi.org/10.1080/19416520903047533

Olsson, S. (2009). *Crisis management in the European Union: Cooperation in the face of emergencies*. Berlin, Germany: Springer.

Ortt, R., Bucker, C., & Klein, S. (Eds.). (2016). *Handbook on networks in innovation and crisis management: Theory and practice in a dynamic and disruptive environment.* Leiden, The Netherlands: NITIM Graduate School. https://doi.org/http://dx.doi.org/10.17879/64219708811

Osa, Y. (2013). *The growing role of NGOs in disaster relief and humanitarian assistance in East Asia*. Washington, DC: Brookings Institution Press.

Osei, P. D. (2011). Comparative emergency management: Examining global and regional responses to disasters. In D. S. Miller & J. D. Rivera (Eds.), *Network governance in emergency management in the Caribbean.* Boca Raton, FL: CRC Press.

Padgett, D. (2008). *Qualitative methods in social work research* (2nd ed.). Los Angeles, CA: Sage

Padiila, Y. C., & Daigle, L. E. (1998). Inter-agency collaboration in an international setting. *Administration in Social Work, 22*(1), 65-81.

Page, S. (2004). Measuring accountability for results in interagency collaboratives. *Public Administration Review, 64*(5), 591-606. https://doi.org/10.1111/j.1540-6210.2004.00406.x

Pall, P., Aina, T., Stone, D. A., Stott, P. A., Nozawa, T., Hilberts, A. G. J., . . . Allen, M. R. (2011). Anthropogenic greenhouse gas contribution to flood risk in England and Wales in autumn 2000. *Nature, 470*(7334), 382-385. https://doi.org/10.1038/nature09762

Parkhe, A. (1996). International joint venture. In B. J. Punnett & O. Shenkar (Eds.), *Handbook for international management research* Cambrdige, MA: Blackwell.

Paton, D., Johnston, D. M., Mamula-Seadon, L., & Kenney, C. (2014). Recovery and development: Perspectives from New Zealand and Australia. In N. Kapucu & K. T. Liou (Eds.), *Disaster and development: Examining global issues and cases* (pp. 255-272). New York, NY: Springer.

Patrick, K., & Kim, W. (2011). NGO and community-oriented disaster response. In D. S. Miller & J. D. Rivera (Eds.), *Comparative Emergency Management* (pp. 329-345). Boca Raton, FL: CRC Press.

Patrick, S. (2014). The unruled world: The case for good enough global governance*93*(1), 58-73. Retrieved from http://canterbury.summon.serialssolutions.com

Patton, M. Q. (1999). Enhancing the quality and credibilty of qualitative analysis. *Health Service Research, 34*, 1189-1208.

Pelias, R. (2011). Writing into position. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (4th ed.). Thousand Oaks, CA: Sage.

Pereira, J. J. (2018, April). *Progress on enhancing preparedness for response and recovery.* Paper presented at the 2018 Asian Science and Technology Conference on Disaster Risk Reduction, Beijing, China.

Pereira, J. J., Tan, C. T., & Komoo, I. (2010). Mainstreaming climate change adaptation and disaster risk reduction: A Malaysian approach. In R. Shaw, J. M. Pulhin, & J. J. Pereira (Eds.), *Climate change adaptation and disaster risk reduction: An Asian perspective* (5th ed., pp. 147-167). Bingley, United Kingdom: Emerald

Perlmutter, H. V., & Heenan, D. A. (1986). Cooperate to compete globally. *Harvard Business Review, 64*(2), 136-152.

Peters, C., & Prosser, B. (2010). Directions in disaster resilience policy. *Australian Journal of Emergency Management, 25*(3), 8-11.

Peters, L. D., Pressey, A. D., Vanharanta, M., & Johnston, W. J. (2013). Constructivism and critical realism as alternative approaches to the study of business networks: Convergences and divergences in theory and in research practice. *Industrial Marketing Management, 42*(3), 336-346. https://doi.org/10.1016/j.indmarman.2013.02.003

Pfeffer, J., & Salancik, G. R. (2003). *The external control of organizations: A resource dependence perspective*. Stanford, CA: Stanford Business Books.

Phibbs, S., Kenney, C., Severinsen, C., Mitchell, J., & Hughes, R. (2016). Synergising public health concepts with the sendai framework for disaster risk reduction: A conceptual glossary. *International Journal of Environmental Research and Public Health, 13*(12), 1241. https://doi.org/10.3390/ijerph13121241

Philliber, S. G., Schwab, M. R., & Samsloss, G. (1980). *Social research: Guides to a decision-making process*. Itasca, IL: Peacock.

Phillimore, J., & Goodson, L. (2004). *Qualitative research in tourism: Ontologies, epistemologies and methodologies*. London, United Kingdom: Routledge.

Phillips, N., Lawrence, T. B., & Hardy, C. (2000). Inter-organizational collaboration and the dynamics of institutional fields. *Journal of Management Studies, 37*(1), 22-43.

Pigeau, R. M., Carol. (2002). Re-conceptualing command and control. *Canadian Military Journal, 3* (1), 53-63.

Pinto, M. B., Pinto, J. K., & Prescott, J. E. (1993). Antecedents and consequences of project team cross-functional cooperation. *Management Science, 39*(10), 1281-1297. https://doi.org/10.1287/mnsc.39.10.1281

Piotrowski, C. (2010). Earthquake in Haiti: The failure of crisis management? . *Organizational Development Journal, 28*(1), 107-112.

Poontirakul, P., Brown, C., Seville, E., Vargo, J., & Noy, I. (2017). Insurance as a double-edged sword: Quantitative evidence from the 2011 Christchurch earthquake. *Geneva Papers on Risk and Insurance: Issues and Practice, 42*(4), 609-632. https://doi.org/10.1057/s41288-017-0067-y

Portugal wildfires: Why are they so deadly? (2017, June 20). *BBC*. Retrieved from http://www.bbc.com/news/world-europe-40341180

Powell, W. W., Koput, K. W., & Smith-Doerr, L. (1996). Interorganizational collaboration and the locus of innovation: Networks of learning in biotechnology. *Administrative Science Quarterly, 41*(1), 116-145. https://doi.org/10.2307/2393988

Power, N. (2017). Extreme teams: Towards a greater understanding of multi-agency teamwork during major emergencies and disasters. Retrieved from http://eprints.lancs.ac.uk/88335/1/POWER_AP_PRE_PRINT.pdf

Pratt, M. (2009). From the editors: For the lack of a boilerplate: Tips on writing up (and reviewing) qualitative research. *Academy of Management Journal, 52*(5), 856-862.

Provan, K. G., & Kenis, P. N. (2008). Modes of network governance: Structure, management, and effectiveness. *Journal of Public Administration Research and Theory, 18*(2), 229-252. https://doi.org/10.1093/jopart/mum015

Provan, K. G., Kenis, P. N., & Human, S. E. (2015). Legitimacy building in organisational networks. In L. B. Bingham & R. O'Leary (Eds.), *Big ideas in collaborative public management* (pp. 121-137). New York, NY: Routledge.

Provan, K. G., & Milward, H. B. (1995). A preliminary theory of interorganisational network effectiveness: A comparative-study of 4 community mental-health systems. *Administrative Science Quarterly, 40*(1), 1-33.

Proy, C., Tinel, C., & Fontannaz, D. (2013). Pleiades in the context of the International Charter "space and major disasters". In *IEEE International Geoscience and Remote Sensing Symposium-IGARSS* (pp. 4530-4533). Melbourne, Australia: IEEE

Putnam, R. D. (2002). *Democracies in flux: The evolution of social capital in contemporary society*. New York, NY: Oxford University Press.

Qi, S., & Liu, H. (2017). Natural and anthropogenic hazards in the Yellow River Delta, China. *Natural Hazards, 85*(3), 1907-1911. https://doi.org/10.1007/s11069-016-2638-9

Quarantelli, E. L. (1988). Disaster crisis management: A summary of research findings. *Journal of Management Studies, 25*(4), 373-385. https://doi.org/10.1111/j.1467-6486.1988.tb00043.x

Quarantelli, E. L. (2005). A social science research agenda for the disasters of the 21st century. In R. W. Perry & E. L. Quarantelli (Eds.), *What is a disaster? New answers to old questions* (pp. 325-396). Philadelphia, PA: Xlibris.

Rahill, G. J., Ganapati, N. E., Clérismé, J. C., & Mukherji, A. (2014). Shelter recovery in urban Haiti after the earthquake: The dual role of social capital. *Disasters, 38*, S73-S93. https://doi.org/10.1111/disa.12051

Raikes, J., & McBean, G. (2016). Responsibility and liability in emergency management to natural disasters: A Canadian example. *International Journal of Disaster Risk Reduction, 16*, 12-18. https://doi.org/10.1016/j.ijdrr.2016.01.004

Ramanath, R. (2009). Limits to institutional isomorphism: Examining internal processes in NGO - government interactions. *Nonprofit and Voluntary Sector Quarterly, 38*(1), 51-76. https://doi.org/10.1177/0899764008315181

Reitan, T. C. (1998). Theories of interorganizational relations in the human services. *Social Service Review, 72*(3), 285-309. https://doi.org/10.1086/515760

Renn, O., Klinke, A., & Asselt, M. V. (2011). Coping with complexity, uncertainty and ambiguity in risk governance: A synthesis. *AMBIO, 40*(2), 231-246. https://doi.org/10.1007/s13280-010-0134-0

Rethemeyer, R. K. (2005). Conceptualizing and measuring collaborative networks. *Public Administration Review, 65*(1), 117-121.

Richards, L., & Morse, J. M. (2013). *Readme first for a user's guide to qualitative methods* (3rd ed.). Los Angeles, CA: Sage.

Ritchie, J., & Lewis, J. (2003). *Qualitative research practice: A guide for social science students and researchers*. London, United Kingdom: Sage

Roberts, C. (2010). *ASEAN's Myanmar crisis: Challenges to the pursuit of a security community*. Singapore: Institute of Southeast Asian Studies.

Robinson, S. E., & Gaddis, B. S. (2012). Seeing past parallel play: Survey measures of collaboration in disaster situations. *Policy Studies Journal, 40*(2), 256-273. https://doi.org/10.1111/j.1541-0072.2012.00452.x

Rodríguez, H., Quarantelli, E. L., & Dynes, R. R. (2006). *Handbook of disaster research*. New York, NY: Springer.

Rogers, P., Burnside-Lawry, J., Dragisic, J., & Mills, C. (2016). Collaboration and communication: Building a research agenda and way of working towards community disaster resilience. *Disaster Prevention and Management, 25*(1), 75-90.

Rosenthal, U., & Kouzmin, A. (1997). Crises and crisis management: Toward comprehensive government decision making. *Journal of Public Administration Research and Theory, 7*(2), 277-304.

Rothstein, B. (1998). *Just institutions matter: The moral and political logic of the universal welfare state*. Cambridge, United Kingdom: Press Syndicate of the University of Cambridge.

Rüland, J. (2000). ASEAN and the Asian crisis: Theoretical implications and practical consequences for Southeast Asian regionalism. *The Pacific Review, 13*(3), 421-451.

Rynes, S., & Gephart Jr, R. P. (2004). Qualitative research and the Academy of Management Journal. *Academy of Management Journal, 47*(4), 454-462. https://doi.org/10.5465/AMJ.2004.14438580

Rynes, S., & Gephart, R. P. (2004). Qualitative research and the Academy of Management Journal. *Academy of Management Journal, 47*(4), 454-462.

Saab, D. J., Tapia, A., Maitland, C., Maldonado, E., & Tchouakeu, L.-M. N. (2013). Inter-organizational coordination in the wild: Trust building and collaboration among field-level ICT workers in humanitarian relief organizations. *Voluntas: International Journal of Voluntary and Nonprofit Organizations, 24*(1), 194-213. https://doi.org/10.1007/s11266-012-9285-x

Sabel, C. F., & Simon, W. H. (2011). Minimalism and experimentalism in the administrative State. *Georgetown Law Journal, 100*(1), 53-93.

Salas, E., Burke, C. S., & Cannon‑Bowers, J. A. (2000). Teamwork: Emerging principles. *International Journal of Management Reviews, 2*(4), 339-356. https://doi.org/10.1111/1468-2370.00046

Saldaña, J. (2016). *The coding manual for qualitative researchers*. Thousand Oaks, CA: Sage.

Salman Sawalha, I. H. (2014). Collaboration in crisis and emergency management: Identifying the gaps in the case of storm 'Alexa'. *Journal of Business Continuity & Emergency Planning, 7*(4), 312-323.

Salmon, P., Stanton, N., Jenkins, D., & Walker, G. (2011). Coordination during multi-agency emergency response: issues and solutions. *Disaster Prevention and Management: An International Journal, 20*(2), 140-158. https://doi.org/10.1108/09653561111126085

Samaddar, S., Choi, J., Misra, B. A., & Tatano, H. (2014). Insights on social learning and collaborative action plan development for disaster risk reduction: Practicing Yonmenkaigi System Method (YSM) in flood-prone Mumbai. *Natural Hazards, 75*(2), 1531-1554. https://doi.org/10.1007/s11069-014-1380-4

Sandelowski, M. (2008). Theoretical saturation. In L. Given (Ed.), *The Sage encyclopedia of qualitative research methods* (pp. 876-877). London, United Kingdom: Sage.

Sangsubhan, K., & Basri, M. C. (2012). Global financial crisis and ASEAN: Fiscal policy response in the case of Thailand and Indonesia: Thailand and Indonesia fiscal responses. *Asian Economic Policy Review, 7*(2), 248-269.

Schensul, J. (2008). Methodology. In L. Given (Ed.), *The Sage Encyclopedia of qualitative research methods* (pp. 517-521). Thousand Oaks, CA: Sage.

Schneider, S. (2005). Administrative breakdowns in the governmental response to Hurricane Katrina. *Public Administration Review, 65*(5), 515-516.

Scholtens, A. (2008). Controlled collaboration in disaster and crisis management in the Netherlands: History and practice of an overestimated and underestimated concept. *Journal of Contingencies and Crisis Management, 16*(4), 195-207. https://doi.org/10.1111/j.1468-5973.2008.00550.x

Schwandt, T. A. (2007). *The Sage dictionary of qualitative inquiry* (3rd ed.). Thousand Oaks, CA: Sage.

Seekins, D. (2009). State, society and natural disaster: Cyclone Nargis in Myanmar (Burma). *Asian Journal of Social Science, 37*(5), 717-737. https://doi.org/10.1163/156848409X12474536440500

Seibel, W. (2010). Beyond bureaucracy—Public administration as political integrator and non-Weberian thought in Germany. *Public Administration Review, 70*(5), 719-730. https://doi.org/10.1111/j.1540-6210.2010.02200.x

Shadish, W. R., & Sullivan, K. J. (2011). Characteristics of single-case designs used to assess intervention effects in 2008. *Behavior Research Methods, 43*(4), 971-980. https://doi.org/10.3758/s13428-011-0111-y

Shaw, M. M. (2003). Successful collaboration between the nonprofit and public sectors. *Nonprofit Management and Leadership, 14*(1), 107-120. https://doi.org/10.1002/nml.24

Shaw, R., Pulhin, J., & Pereira, J. J. (2010). *Climate change adaptation and disaster risk reduction: An Asian perspective* (5th ed.). Bingley, United Kingdom: Emerald.

Shemer, O., & Schmid, H. (2007). Toward a new definition of community partnership: A three-dimensional approach. *Journal of Rural Cooperation, 35*(2), 123-139.

Shi, P. (2012). On the role of government in integrated disaster risk governance—Based on practices in China. *International Journal of Disaster Risk Science, 3*(3), 139-146. https://doi.org/10.1007/s13753-012-0014-2

Simo, G., & Bies, A. L. (2007). The role of nonprofits in disaster response: An expanded model of cross-sector collaboration. *Public Administration Review, 67*(1), 125-142. https://doi.org/10.1111/j.1540-6210.2007.00821.x

Sink, D. W. (1998). Interorganisational collaboration. In J. M. Shafritz (Ed.), *The international encyclopedia of public and administration* (Vol. 2, pp. 1188-1191). Boulder, CO: Westview.

Smith, D. (2005). Through a glass darkly. In R. W. Perry & E. L. Quarantelli (Eds.), *What is a disaster: New answers to old questions* (pp. 292-307). Philadelphia, PA: Xlibris.

Smith, G., & Cantley, C. (1985). *Assessing health care: A study in organisational evaluation*. Milton Keynes, United Kingdom: Open University Press.

Smith, G., & May, D. (1980). The artificial debate between rationalist and incrementalist models of decision making. *Policy & Politics, 8*(2), 147-161. https://doi.org/10.1332/030557380782629005

Snavely, K., & Tracy, M. B. (2000). Collaboration among rural nonprofit organizations. *Nonprofit Management and Leadership, 11*(2), 145-165. https://doi.org/10.1002/nml.11202

Sobel, R. S., & Leeson, P. T. (2006). Government's response to Hurricane Katrina: A public choice analysis. *Public Choice, 127*(1/2), 55-73.

Sørensen, E. (2012). Measuring the accountability of collaborative innovation. *Innovation Journal, 17*(1), 2-18.

South East Asia haze: What is slash-and-burn? (2013, June 24). *BBC*. Retrieved from https://www.bbc.com/news/business-23026219

Spekkink, W. A. H., & Boons, F. A. A. (2016). The emergence of collaborations. *Journal of Public Administration Research and Theory, 26*(4), 613-630. https://doi.org/10.1093/jopart/muv030

Sreshthaputra, W. (2017, October 31). *UN report says urgent action required on disaster resilience in South and South-West Asia* [Press release]. Retrieved from http://www.unescap.org/news/un-report-says-urgent-action-required-disaster-resilience-south-and-south-west-asia

Stake, R. E. (2007). Qualitative case studies. In N. Denzin & Y. S. Lincoln (Eds.), *Strategies of qualitative inquiry* (3rd ed., pp. 50-62). Thousand Oaks, CA.: Sage.

Stark, A. (2014). Bureaucratic values and resilience: An exploration of crisis management adaptation. *Public Administration, 92*(3), 692-706. https://doi.org/10.1111/padm.12085

Stentoft, J., Mikkelsen, O. S., & Ingstrup, M. B. (2018). Coopetition segments in a public-sector context: Insights from a business region. *International Journal of Public Administration, 41*(13), 1084-1094. https://doi.org/10.1080/01900692.2018.1466332

Stinchcombe, A. L. (1965). Social structure and organizations. In J. G. March (Ed.), *Handbook of organizations* (pp. 433-455). Chicago Rand McNally.

Stoker, G. (2004). Designing institutions for governance in complex environments: Normative rational choice and cultural institutional theories explored and contrasted. *Economic and Social Research Council Fellowship Paper,* (1)

Stoker, G. (2006). Public value management: A new narrative for networked governance? *The American Review of Public Administration, 36*(1), 41-57. https://doi.org/10.1177/0275074005282583

Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. *The Academy of Management Review, 20*(3), 571-610. https://doi.org/10.5465/AMR.1995.9508080331

Sulaiman, N. H., Kamarudin, M. K. A., Toriman, M. E., Juahir, H., Ata, F. M., Azid, A., . . . Sideng, U. (2017). Relationship of rainfall distribution and water level on major flood 2014 in Pahang River Basin, Malaysia. *EnvironmentAsia, 10*(1), 1-8.

Sulaiman, N. H., Teo, W. S., Fermando, T., Shiau, W. C., Farhan Roslan, A., & Kamalia Abdul Latib, S. K. (2019). Multi-agency collaboration in flood disaster management in Sarawak, Malaysia. *International Journal of Innovative Technology and Exploring Engineering, 8*(8S), 411-419.

Susskind, L. E., & Cruikshank, J. (1987). *Breaking the impasse*. New York, NY: Basic Books.

Suwanvanichkij, V., Mahn, M., Maung, B., Daniels, N., Murakami, A., Wirtz, A., & Beyrer, C. (2009). *After the storm: Voices from the Delta*. Retrieved from http://www.jhsph.edu

Sylves, R. T., & Comfort, L. K. (2012). The Exxon Valdez and BP Deepwater Horizon oil spills: Reducing risk in socio-technical systems. *American Behavioral Scientist, 56*(1), 76-103. https://doi.org/10.1177/0002764211413116

Takara, K. (2018). Promotion of interdisciplinary and transdisciplinary collaboration in disaster risk reduction. *Journal of Disaster Research, 13*(7), 1193-1198. https://doi.org/10.20965/jdr.2018.p1193

Tappero, J. W., & Tauxe, R. V. (2011). Lessons learned during public health response to cholera epidemic in Haiti and the Dominican Republic. *Emerging Infectious Diseases, 17*(11), 2087-2093. https://doi.org/10.3201/eid1711.110827

Taylor, R. (2013). Case-study research in context. *Nurse researcher, 20*(4), 4-5.

TCG. (2008a). Myanmar: 1st press release of Tripartite Core Group (TCG). Retrieved from http://reliefweb.int/report/myanmar/myanmar-1st-press-release-tripartite-core-group

TCG. (2008b). Post-Nargis joint assessment. Retrieved from https://yangon.sites.unicnetwork.org/files/2013/05/post-nargis_joint_assessment_all_pages.pdf

Thagard, P. (1992). Adversarial problem solving: Modeling an opponent using explanatory coherence. *Cognitive Science, 16*(1), 123-149. https://doi.org/10.1016/0364-0213(92)90019-Q

Thompson, D. D. P. (2012). Leveraging learning to improve disaster management outcomes. *International Journal of Disaster Risk Science, 3*(4), 195-206. https://doi.org/10.1007/s13753-012-0020-4

Thomson, A. M., & Perry, J. L. (2006). Collaboration processes: Inside the black box. *Public Administration Review, 66*(1), 20-32. https://doi.org/10.1111/j.1540-6210.2006.00663.x

Timmerman, P. (1981). *Vulnerability, resilience and the collapse of society: A review of models and possible climatic applications*. Toronto, Canada. Institute for Environmental Studies, University of Toronto

Tobin, G. A., & Begley, C. M. (2004). Methodological rigour within a qualitative. *Journal of Advanced Nursing, 48*(4), 388-396.

Tong, X., & Zhang, H. (2019). *China's emergency management: Theory, practice and policy*. Singapore: Springer.

Tooher, R., Collins, J., Braunack-Mayer, A., Burgess, T., Skinner, S. R., O'Keefe, M., . . . Marshall, H. S. (2017). Intersectoral collaboration to implement school-based health programmes: Australian perspectives. *Health Promotion International, 32*(2), 312-321. https://doi.org/10.1093/heapro/dav120

Tracy, S. J. (2010). Qualitative quality: Eight "Big-Tent" criteria for excellent qualitative research. *Qualitative Inquiry, 16*(10), 837-851. https://doi.org/10.1177/1077800410383121

Trist, E. (1983). Referent organisations and the development of inter-organisational domains. *Human Relations, 36*(3), 269-284.

Tsai, W. (2002). Social structure of "coopetition" within a multiunit organization: Coordination, competition, and intraorganizational knowledge sharing. *Organization Science, 13*(2), 179-190. https://doi.org/10.1287/orsc.13.2.179.536

Tweed, A. E., & Charmaz, K. (2011). Grounded theory for mental health practitioners. In A. Thompson & D. Harper (Eds.), *Quality research methods in mental health and psychotherapy: A guide for students and practitioners* (pp. 131-146). Oxford, United Kingdom: Wiley-Blackwell.

Uhr, C. (2017). Leadership ideals as barriers for efficient collaboration during emergencies and disasters. *Journal of Contingencies and Crisis Management, 25*(4), 301-312. https://doi.org/10.1111/1468-5973.12157

Un, C. A., Cuervo-Cazurra, A., & Asakawa, K. (2010). R&D collaborations and product innovation. *Journal of Product Innovation Management, 27*(5), 673-689. https://doi.org/10.1111/j.1540-5885.2010.00744.x

UNESCAP. (2016). Disasters without borders: Regional resilience for sustainable development: Asia-Pacific Disaster Report 2015. Retrieved from http://www.unescap.org/sites/default/files/Full%20Report%20%20%5BLow-Res%5D.pdf

UNISDR. (2004). *Living with risk: A global review of disaster reduction initiatives*. Geneva, Switzerland: UNISDR.

UNISDR. (2007a). Building disaster resilient communities: Good practices and lessons learned. Retrieved from https://www.unisdr.org/files/596_10307.pdf

UNISDR. (2007b). Hyogo Framework for Action 2005-2015: Building the Resilience of Nationas and Communities to Disasters. Retrieved from http://www.unisdr.org/files/1037_hyogoframeworkforactionenglish.pdf

UNISDR. (2015). Sendai Framework for Disaster Risk Reduction 2015-2030. Retrieved from http://www.unisdr.org/files/43291_sendaiframeworkfordrren.pdf

Unlu, A., Kapucu, N., & Sahin, B. (2010). Disaster and crisis management in Turkey: A need for a unified crisis management system. *Disaster Prevention and Management: An International Journal, 19*(2), 155-174. https://doi.org/10.1108/09653561011037977

Useem, M., Cook, J., & Sutton, L. (2005). Developing leaders for decision making under stress: Wildland firefighters in the South Canyon Fire and its aftermath. *Academy of Management Learning & Education, 4*(4), 461-485.

Vakis, R. (2006). Complementing natural disasters management: The role of social protection. *The World Bank Social Protection Paper.* Retrieved 0543, from

http://siteresources.worldbank.org/SOCIALPROTECTION/Resources/SP-Discussion-papers/Social-Risk-Management-DP/0543.pdf

Van den Berg, B., Wong, A., Velden, P. G., Boshuizen, H. C., & Grievink, L. (2012). Disaster exposure as a risk factor for mental health problems, eighteen months, four and ten years post-disaster: A longitudinal study. *BMC Psychiatry, 12*(1), 147-147. https://doi.org/10.1186/1471-244X-12-147

Van den Hoonaard, W. (2008). Theoretical sampling. In L. Given (Ed.), *Sage encyclopedia of qualitative research methods* (pp. 875-876). Thousand Oaks, CA: Sage.

Van Maanen, J. (1979). Reclaiming qualitative methods for organizational research: A preface. *Administrative Science Quarterly, 24*(4), 520-526.

Van Scotter, J., Pawlowski, S., & Cu, T. (2013). An examination of interdependencies among major barriers to coordination in disaster response. *International Journal of Emergency Management, 8*(4), 281-307. https://doi.org/10.1504/IJEM.2012.051640

Vangen, S., Hayes, J. P., & Cornforth, C. (2015). Governing cross-sector, Inter-organizational collaborations. *Public Management Review, 17*(9), 1237-1260. https://doi.org/10.1080/14719037.2014.903658

Vangen, S., & Huxham, C. (2003). Enacting leadership for collaborative advantage: Dilemmas of ideology and pragmatism in the activities of partnership managers. *British Journal of Management, 14*(4), S61-S76.

VanWynsberghe, R., & Khan, S. (2007). Redefining case study. *International Journal of Qualitative Methods, 6*(2).

Walker, B., de Vries, H. P., & Nilakant, V. (2017). Managing legitimacy: The Christchurch post-disaster reconstruction. *International Journal of Project Management, 35*(5), 853-863. https://doi.org/10.1016/j.ijproman.2016.07.007

Walter, U. M., & Petr, C. G. (2000). A template for family-centered interagency collaboration. *Families in Society, 81*(5), 494.

Wamsley, G. L., & Wolf, J. F. (1996). *Refounding democratic public administration: Modern paradoxes, postmodern challenges*. Thousand Oaks, CA: Sage

Wankhade, P., & Patnaik, S. (2019a). *Collaboration and governance in the emergency services: Issues, opportunities and challenges*. Switzerland: Palgrave MacMillan.

Wankhade, P., & Patnaik, S. (2019b). Conclusion: Collaboration and governance: It's very much about 'process' and 'people'! In P. Wankhade & S. Patnaik (Eds.), *Collaboration and governance in the emergency services: Issues, opportunities and challenges* (pp. 127-141). Cham, Switzerland: Palgrave MacMillan.

Waugh Jr, W. L. (2009). Mechanisms for collaboration in emergency management: ICS, NIMS, and the problem with command and control. In R. O. Leary (Ed.), *The collaborative public manager: New ideas for the twenty-first century* (pp. 157-175). Washington, DC: Georgetown University Press.

Waugh Jr, W. L., & Streib, G. (2006). Collaboration and leadership for effective emergency management. *Public Administration Review, 66*(1), 131-140. https://doi.org/10.1111/j.1540-6210.2006.00673.x

Weatherbee, D. E. (1985). *Southeast Asia divided: The ASEAN-Indochina crisis.* Boulder, CL: Westview Press.

Wertz, F. J., Charmaz, K., McMullen, L., Josselson, R., & McSpadden, E. (2011). *Five ways of doing qualitative analysis: Phenomenological psychology, grounded theory, discourse analysis, narrative research, and intuitive inquiry.* New York, NY: Guilford

West, M. A. (2012). *Effective teamwork: Practical lessons from organizational research* (3rd ed.). Malden, MA: Wiley.

Westrum, R. (2006). A typology of resilience situations. In E. Hollnagel, D. Woods, & N. Leveson (Eds.), *Resilience engineering: Concepts and precepts* (pp. 55-65). Aldershot, United Kingdom: Ashgate.

Wettenhall, R. L. (1975). *Bushfire disaster: An Australian community in crisis.* Sydney, Australia: Angus and Robertson.

WHO. (1978). *Declaration of Alma-Ata.* Alma-Ata, USSR. Retrieved from https://www.who.int/publications/almaata_declaration_en.pdf

WHO. (2008). *Closing the gap in a generation: Health equity through action on the social determinants of health.* New York, NY: Elsevier https://doi.org/10.1016/S0140-6736(08)61690-6

WHO. (2011). *Intersectoral action on health: A path for policy-makers to implement effective and sustainable action on health.* Kobe, Japan: World Health Organization Centre for Health Development.

Wijayanti, A. (2012). A disaster emergency logistic system for ASEAN is officially launched. Retrieved from http://asean.org/a-disaster-emergency-logistic-system-for-asean-is-officially-launched/

Willis, N. (2012). Natural disaster, national sovereignty and state negligence : An international law analysis of the denial of emergency relief after Cyclone Nargis in Myanmar (Burma). *University of Tasmania Law Review, 31*(2), 134-154.

Wilson, V. (2016). Research methods: Design, methods, case study…oh my. *Evidence Based Library and Information Practice, 11*(1), 39-40.

Wisner, B. (2004). *At risk: Natural hazards, people's vulnerability, and disasters* (2nd ed.). London, United Kingdom: Routledge.

Wood, D. J., & Gray, B. (1991). Toward a comprehensive theory of collaboration. *Journal of Applied Behavioral Science, 27*(2), 139-162.

Woodland, R. H., & Hutton, M. S. (2012). Evaluating organizational collaborations: Suggested entry points and strategies. *American Journal of Evaluation, 33*(3), 366-383.

Woodruff, J. (2005). Consequence and likelihood in risk estimation: A matter of balance in UK and safety risk assessment practice. *Safety Science, 43*, 343-353.

Wu, Z., Ma, T., Jiang, H., & Jiang, C. (2013). Multi-scale seismic hazard and risk in the China mainland with implication for the preparedness, mitigation, and management of earthquake disasters: An overview. *International Journal of Disaster Risk Reduction, 4*, 21-33. https://doi.org/10.1016/j.ijdrr.2013.03.002

Yami, S., & Nemeh, A. (2014). Organizing coopetition for innovation: The case of wireless telecommunication sector in Europe. *Industrial Marketing Management, 43*(2), 250-260. https://doi.org/10.1016/j.indmarman.2013.11.006

Yates, D., & Paquette, S. (2011). Emergency knowledge management and social media technologies: A case study of the 2010 Haitian earthquake. *International Journal of Information Management, 31*(1), 6-13. https://doi.org/10.1016/j.ijinfomgt.2010.10.001

Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Thousand Oaks, CA: Sage.

Yin, R. K. (2016). *Qualitative research from start to finish*. New York, NY: Guilford Press.

Zakaria, R., & Sim, B. H. (2017, January 1). DPM praises NADMA for efficient response to east coast flooding. *New Straits Times*. Retrieved from http://www.nst.com.my/news/2017/01/201137/dpm-praises-nadma-efficient-response-east-coast-flooding

Zakour, M. J., & Gillespie, D. F. (2013). *Community disaster vulnerability: Theory, research, and practice*. New York, NY: Springer.

Zaw, T. N., & Lim, S. (2017). The military's role in disaster management and response during the 2015 Myanmar floods: A social network approach. *International Journal of Disaster Risk Reduction, 25*, 1-21. https://doi.org/10.1016/j.ijdrr.2017.06.023

Zhang, Q., Lu, Q., Hu, Y., & Lau, J. (2015). What constrained disaster management capacity in the township level of China? Case studies of Wenchuan and Lushan earthquakes. *Natural Hazards, 77*(3), 1915-1938. https://doi.org/10.1007/s11069-015-1683-0

Zhang, X., Yi, L., & Zhao, D. (2013). Community-based disaster management: A review of progress in China. *Natural Hazards, 65*(3), 2215-2239. https://doi.org/10.1007/s11069-012-0471-3

Appendices

Appendix 3A: Human ethics committee approval

HUMAN ETHICS COMMITTEE

Secretary, Rebecca Robinson
Telephone: +64 03 364 2987, Extn 45588
Email: human-ethics@canterbury.ac.nz

Ref: HEC 2016/115

15 November 2016

Khiam Jin Lee
Management, Marketing and Entrepreneurship
UNIVERSITY OF CANTERBURY

Dear Khiam

The Human Ethics Committee advises that your research proposal "The Dynamics of Interorganisational Collaboration in Disaster Management" has been considered and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 9th November 2016.

Best wishes for your project.

Yours sincerely

pp. R. Robinson

Jane Maidment
Chair
University of Canterbury Human Ethics Committee

Appendix 3B: Interview protocol and interview questions

Interview Date		
Interview time	From:	To:
Venue		
Voice Recorder		
Recorder Folder Name		
Recorder Filename		
Note		
Interviewee Description		
		Pseudonym
Name		
Organisation		
Position		
Sex (M/F)		
Year(s) in the organisation		
Type of disaster experienced		
Year of disaster occurrence		
Collaborative partners, if any		

Interview questions for key strategic and operational decision-makers:
1. Could you please tell me briefly about your career history? How long have you been with this organisation? Where were you before this?
2. Could you please tell me about your role in one of the recent disaster responses that happened in Malaysia? What was the specific disaster?
3. To what extent does your organisation working together with other organisations? What were these organisations?
4. What are the reasons for working together?
5. To what extent are you satisfied with the level and quality of collaboration? Why or Why not?
6. Are there any operational challenges in implementing collaboration with other partners? What are they? Why?
7. Please tell me more about your work on the ground during the collaboration stage (or work in the command or operations centre)? What were you doing during the disaster response phase (in an actual disaster response that happened in Malaysia)?
8. How did this collaboration occur? Was it spontaneous? Was it part of a system or policy that had been created earlier?
9. What aspects of working together were positive for you? Why? Could you please give examples? What aspects were less positive? Why? Could you please give examples?
10. What benefits did your organisation obtain by working together with many other organisations? How did it help your organisation?
11. Looking back, what would you have done differently? Why?
12. Anything else that you may share with me about the challenges of 'emergency collaboration' in Malaysia?

Interview questions for disaster aid recipients:
1. What were you doing when floods were unfolding?
2. What happened after the floods receded?
3. What are your reflections on the disaster you have experienced?

Appendix 3C: Data collection milestone overview

Data Collection Means	Description	Dates	Number of Participants (Total 30)
Pilot interviews	Audiovisual-aided semi-structured interviews with participants to assess the design and relevance of interview questions.	November 2016	2
Key informant interviews	Face-to-face semi-structured interviews with strategic and operational decision-makers.	January 2017-February 2017	22
Audiovisual-aided interviews	Audiovisual-aided semi-structured interviews with other strategic and operational decision-makers, including two pilot interviews conducted earlier.	November 2016-June 2017	6
Follow-up interviews	Follow up with key informants through email and audiovisual means as and when new developments related to collaboration evolve.	January 2017-November 2017	5
Field interviews	Face-to-face semi-structured interviews with disaster aid recipients.	February 2017	6

Appendix 3D: Information sheet and participant consent form

![University of Canterbury logo]

Khiam Jin **Lee**, PhD Researcher
Department of Management, Marketing and Entrepreneurship
University of Canterbury, New Zealand
Telephone: +64 27 3336010   Malaysia Cell:+6014-9154037

Email: khiam.lee@pg.canterbury.ac.nz

Information Sheet for research participation on "The Dynamics of Interorganisational Collaboration in Disaster Management"

You are invited to participate in a research project: The dynamics of interorganisational collaboration in disaster management. This research is undertaken as part of my PhD research at the University of Canterbury. For your information, my PhD study is funded by the New Zealand-ASEAN Scholarships.

This project will investigate the varied forms of collaboration, how collaboration evolves during disasters, and the barriers to and enablers of interorganisational collaboration during disasters. The contributions of this research are twofold: to build a theory of interorganisational collaboration in disaster situations, and to provide guiding principles and practical recommendations for the policymakers and disaster management practitioners on the intricacy and nuances of interorganisational collaboration during disasters.

Your participation in this study is voluntary. An interview is to be arranged at your preferred location and time. Each interview is expected to take around 60 minutes and will be audio recorded with your consent. In case a face-to-face interview is not possible or owing to last minute changes, interviews can be conducted via Skype, video-conferencing or telephone, if you find this more convenient. The interview data or any organisational documentation provided are strictly confidential and its uses are for academic purpose only.

You have the right to withdraw from this project at any time. You may ask for your raw data to be returned to you or destroyed at any point. If you withdraw, I will remove all information relating to you. Further to this, you have the right to withdraw any given information you have provided without penalty prior to any publication of the resulting thesis, either partial or full thesis or journal publications. After the interview data is transcribed, you will be given an opportunity to review the transcript of each interview. However, once you have reviewed and provided feedback to the interview transcript, it will become increasingly difficult to remove the influence of your data on the results. You will also be offered an opportunity to receive a written report summarising the overall findings of the project.

The results of the project may be published, but you may be assured of the complete confidentiality of data gathered in this investigation. To ensure anonymity and confidentiality, participants and organisations will be assigned a code and only the researcher and members of the supervisory team will know which code relates to which individual and each organisation. Extra care will be taken to ensure no information is provided in published reports that would reveal identification of any individual or organisations. All data collected for this project will be stored in locked and secure facilities at the University of Canterbury for ten years, after which the data will be destroyed.

A thesis is a public document and will be available through the UC Library.

Please indicate to the researcher on the consent form if you would like to receive a copy of the summary of results of the project.

The project is being carried out as a requirement for a degree of Doctor of Philosophy (PhD) by Khiam Jin Lee under the supervision of Dr. Sanna Malinen and Assoc. Prof. Venkataraman Nilakant, who can be contacted by email and telephone as listed below. They will be pleased to discuss any concerns you may have about participation in the project.

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee, and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

If you agree to participate in the study, you are asked to complete the consent form and return the completed form to the researcher Khiam Lee.

Researcher:

Khiam Jin, Lee, PhD Researcher
Email: khiam.lee@pg.canterbury.ac.nz, or leekhiamjin@gmail.com
New Zealand Mobile Phone: +64-27 3336010

Supervisory Team:

Dr. Sanna Malinen, Primary Supervisor

Email: sanna.malinen@canterbury.ac.nz Office Phone: +64-33642987 x 93787

Assoc. Prof. Venkataraman Nilakant, Associate Supervisor

Email: ven.nilakant@canterbury.ac.nz Office Phone: +64-33642987 x 8621

Attention:
Khiam Jin **Lee**, PhD Researcher
Department of Management, Marketing and Entrepreneurship
University of Canterbury, New Zealand
Telephone: +64 27 3336010 Malaysia cell: +6014-9154037

Email: khiam.lee@pg.canterbury.ac.nz

Consent Form in the Research of "The Dynamics of Interorganisational Collaboration in Disaster Management"

☐ I have been given a full explanation of this project and have had the opportunity to ask questions.

☐ I understand what is required of me if I agree to take part in the research.

☐ I understand that participation is voluntary and I may withdraw at any time without penalty. Withdrawal of participation will also include the withdrawal of any information I have provided should this remain practically achievable.

☐ I understand that any information or opinions I provide will be kept confidential to the researcher and his supervisors and that any published or reported results will not identify the participants. I understand that a thesis is a public document and will be available through the UC Library.

☐ I understand that all data collected for the study will be kept in locked and secure facilities and/or in password protected electronic form and will be destroyed after ten years.

☐ I understand the risks associated with taking part and how they will be managed.

☐ I understand that I am able to receive a report on the findings of the study by contacting the researcher at the conclusion of the project.

☐ I understand that I can contact the researcher Khiam Lee via khiam.lee@pg.canterbury.ac.nz or NZ mobile phone +64 273336010, supervisor Dr. Sanna Malinen, email: sanna.malinen@canterbury.ac.nz, office phone: +64-33642987 x 9787, for further information. If I have any complaints, I can contact the Chair of the University of Canterbury Human Ethics Committee, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz)

☐ I would like a summary of the results of the project.

☐ I give consent to the researcher to use voice recorder to record the interview.

☐ By signing below, I agree to participate in this research project.

Name: _____

Signed:

Date:

Appendix 3E: The list of assisting government agencies in disasters in Malaysia

<div style="border:1px solid black; padding:10px">

<u>National Disaster Management and Relief Committee*(1)</u>

Comprises of public agencies from national, state and district levels:

Chairman: A minister appointed by the Prime Minister
All members of public disaster agencies includes NADMA and Civil Defence Force, and
Minister of Finance
*(2) Minister of National Unity and Community Development (renamed and oversee by the Ministry of Women, Family and Community Development and Prime Minister's Department, 2018)
Chief Secretary of State
Commander of the Armed Forces
Director General of the Royal Malaysia Police
Director General of Health
*Director General of National Security Division, National Security Council (absorbed into NADMA in 2015)
Director General of Fire and Rescue Malaysia
Director General of Atomic Energy Licensing Board
*Director General of Information Ministry (renamed as Ministry of Communications and Multimedia, 2018)
Director General of Transportation Ministry (renamed as Ministry of Transport, 2018)
*Director General of Public Works Ministry (renamed as Ministry of Works, 2018)
*Director General of Environment Ministry (renamed and under the auspice of the Ministry of Energy, Technology, Science, Climate Change and Environment, 2018)
Director General of Social Welfare Ministry (renamed and under the auspice of the Ministry of Women, Family and Community Development, 2018)
Director General of Working and Health Security Ministry (renamed and under the auspice of Ministry of Health, 2018)
Director General of Meteorology Service Department
Director General of Civil Aviation Department

</div>

Note (1): The members of the National Disaster Management and Relief Committee are referred as 'assisting government agencies' in this study.
Note (2): *Shows the new names of some ministries or departments after the transition of Malaysian government in May, 2018.

Appendix 4A: Two excerpts from reflective field memos

The first memo was written on 10 January 2017 and the second was written the next day immediately after the interview. This excerpt summarises a more detailed reflective memo with the following indicators:

- What were your personal feelings and reflections as you were interviewing? How did you personally relate to your participant?
- What questions were useful?
- Were there any other questions that you should have asked?
- How satisfied are you with the interview?
- What codes/ concepts stand out for you from the interview?

The first example of a reflective field memo:

Interview date	Analytic and reflective field memo
10 January 2017	It was my second time meeting Mr Ahmad (not his real name). The first time was in September 2016 where we both presented in the conference of disaster management in overseas. The interview with Mr Ahmad is the longest so far, probably about 90 minutes, and he is passionate to share his insights with mind mappings and drawing on white board. He acknowledges there are coordination and operational challenges since the operationalisation of NADMA. Among other are developing template on report to be issued by National Disaster Command Centre, collecting and collating information from multiple agencies, and providing a synchronised and timely report to the leaders for further decision makings. Mr Ahmad's 20-year experience in his former positions (the details of job descriptions and names of organisation are omitted to keep his identity anonymous) made him always prefer to look at bigger picture and yet meticulous in implementation.

The interview with Ahmad was among the early batch after the two pilot interviews and a second face-to-face interview was conducted. This reflective memo was drafted almost immediately after the interview. In the memo, pressing operational, coordinating and collaboration issues confronting Ahmad's organisation were highlighted as the participant uttered, analysed and illustrated on a whiteboard during the interview. I listened to his stories and deliberately not to take notes so he has no pressure to express himself freely. Nonetheless, Ahmad is a senior civil servant who prefer to analyse problems from micro and strategic perspective with relatively lesser experience in disaster response operation. At time, I am reserved if his concern are valid and realistic as disaster management is dynamic and volatile, different from his previous experience in economic planning. This reflective field memo technique is particularly useful for novice qualitative researchers because the drafting of such a memo helped reorganise the interviewer's thoughts, review interview technique and questions, and better manage the time of future interviews.

The second example of a reflective field memo:

Interview date	Analytic and reflective field memo
11 January 2017	Mr Fakhrul's (not his real name) views from the other assisting government agency's perspective on disaster management is important. His organisation is officially part of the Malaysian National Disaster Management Organisation in September 2015 after a new mechanism was adopted by the government of Malaysia. His organisation and NADMA are currently under the supervision of the Prime Minister Department, and report to the same Minister. Fakhrul's current role is to coordinate with other NGOs and provide training to more than one million of volunteers nationwide. Fakhrul's analysis on his organisation's new role in the areas of rescue and mobilisation of relief items is informative and useful. Fakhrul is very generous with his time and sharing of his 3-week long disaster response in Kelantan, from December 2014 to January 2015. I am very glad to have his support.

The second interview, the next day, with another participant from a different organisation was better conducted. Fakhrul is an experience officer in disaster response operation. His stories of the three-week long disaster response to the major flooding in 2014-2015, which he volunteered, was full of rigour and information. I made comparison his stories in response operation to Ahmad's stories of disaster management strategic planning, and attempted to give myself a more realistic perspective of the barriers in responding to floods in Malaysia. A more satisfactory insight was attained as a result of learning from the previous field memo where critical and specific questions on disaster response and coordination were given priority during the interview.

Appendix 5A: The detailed categorisation of the relationship dynamics among disaster management stakeholders

Stakeholders	NADMA	NDMO	Armed Forces	NGOs (major local)	NGOs (International)	UN Specialised Agency	ASEAN Regional organisation	Disaster-affected populations
NADMA	---	Strong	Weak	Strong	Weak	Strong	Strong	Weak
NDMO	Strong	---	Weak	Strong	Weak	Weak	Weak	Strong
Armed Forces	Weak	Weak	---	Weak	Weak	Weak	Weak	Weak
NGOs (major local)	Strong	Strong	Weak	---	Weak	Weak	Weak	Strong
NGOs (international)	Weak	Weak	Weak	Weak	---	Weak	Weak	Weak
UN specialised agencies	Strong	weak	Weak	Weak	Weak	---	Strong	Weak
ASEAN organisations	Strong	Weak	Weak	Weak	Weak	Strong	---	Weak
Disaster-affected population	Weak	Strong	Weak	Strong	Weak	Weak	Weak	---

Note: Strong tie: Positive engagement between two organisations in which each other strongly feels the need to collaborate for mutual benefit.
Weak tie: Implausible or close to non-existent engagement where one organisation sees no value or significance in working with another.

Appendix 6A: Four types of collaboration

	Willing collaboration		Unwilling collaboration	
Types of collaboration	Enthusiastic	Mandate-driven	Reluctant	Non-collaboration
Stakeholders (non-exhaustive)	NADMA & other assisting government agencies; NADMA & ASEAN organisations	NADMA & UN agencies	NADMA & disaster aid recipients	Between major local NGOs
Purpose of collaboration	To augment the strength of an individual organisation, achieving an integrated disaster response	To benchmark on international best practice, fulfil legitimate roles as required by agreement or international framework	To search and rescue lives, and protect property, provide swift relief support to alleviate the suffering of disaster-affected people	To pre-arrange a mechanism to ensure no duplication or waste of relief items distribution, deploy volunteers to complement limitations on disaster ground, joint force to negotiate with the authorities for a coordinated disaster response and recovery
Practical examples of existing *collaboration (or non-collaboration)*	NADMA counts on other government assisting agencies for manpower, resource, secretariat service at state and district levels; other assisting government agencies rely on NADMA for official instruction to achieve integrated national disaster response. NADMA and ASEAN organisation are enthusiastic partners not only driven by agreement, but also ASEAN solidarity spirit and high-level of trust between them.	NADMA only interacts and collaborates with UN agencies through formal channels after cautious membership selection and protocol design. NADMA regards them as *foreign entities* per se. Collaboration is deemed a manifestation of conforming to the agreement or framework, although both entities have genuine intention to contribute to the success of mutually beneficial outcomes	Disaster aid recipients claimed the authorities are inefficient, not transparent and indifferent in relief and compensation, at times, refused to be evacuated even when requested by the authorities. Though public managers are genuine in rendering support, both entities have a low level of trust for each other, government officials label them as uncooperative in general, public disaster agencies lack of time or motivation to build trust with communities	Major local NGOs avoid collaborating between themselves by claiming others have less experience or are under-equipped, of different organisation values, specialties, and mission objectives. Both parties are concerned about losing discretion and control if they team up with other partners who are more dominant in a dynamic social system. However, they may collaborate involuntarily if require by law.
Importance in disaster response	Highly critical: Pool necessary resources for swift operation to save lives, particularly in event of cross-border disaster	Moderately critical: Accentuate accountability, good governance and transparency in action	Highly critical: Relevant to close the gap of perceptions between government aid givers and aid recipients on what to prepare for evacuation in rural areas.	Highly critical: Capable of complementing public agencies' strengths in disaster response and recovery phases.
Level of collaboration occurred	High-level	Moderate-level	Low-level	Not occur