Interface between Disaster and Development: Local Economic Revival through Collaborative Post-Disaster Recovery Governance and Network in Indonesia

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The candidate confirms that the work submitted is his own and that appropriate credit has been given where reference has been made to the work of others.

Abstract

Disasters are an increasingly prevalent phenomenon in the world, not only because of the effects of climate change, but also because of the increase in human population and the diversity of human behaviours that triggered the catastrophic events. A form of real interaction between human and earth has been clearly represented by the study of disaster and development interfaces. Due to the unique lessons noted from best practices reports and literatures, a case of Jogjakarta earthquake in 2006 in Indonesia, has been chosen as case study to explore this topic, in particularly from a local economy and recovery point of view.

Through the application of mixed qualitative and quantitative research methods, this research seeks to explore evidences as a basis to formulate a concept that bridge disaster recovery towards more sustainable development. Among others, social networking, descriptive statistics, content analysis and comparative analysis are applied in this research. The aim is to identify empirically the extent to which collaborative works and networks in recovery context can contribute to initiating a resurgence of the local economy after the disaster, and to further provide recommendations for path towards a more sustainable local economic recovery, general model and recovery governance platform.

The most important finding of this study is that most process and elements involved in the disaster recovery governance platform proposed have placed the networks and core understandings embodied in the fundamentals of collaboration at the heart of a resilient disaster recovery study. In addition, the recovery process that empowers the local citizens to be more responsible for their own recovery, with special attention to social and cultural values as part of ten propositions resulting from this study, is regarded as the core element of successful recovery. Furthermore, the local governmental actors play key roles in the recovery of their local economy, supported by the central government, and other non-government actors such as local leaders, universities' research contribution, private sectors partnership schemes, NGOs and international agencies.

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Abbreviations and Acronyms

APBD	:	*Anggaran Pendapatan dan Belanja Daerah*, i.e. Regional Income and Expenditure Budgets
BAPPENAS	:	*Badan Perencanaan Pembangunan Nasional*, i.e. National Development Planning Agency
BNPB	:	*Badan Nasional Penanggulangan Bencana*, i.e. National Disaster Management Agency
BPBD	:	*Badan Penanggulangan Bencana Daerah*, i.e. Regional Disaster Management Agency
BPS	:	*Badan Pusat Statistik*, i.e. National Bureau for Statistics
BI	:	*Bank Indonesia*, i.e. the Central Bank of Indonesia
BMT	:	*Baitul Mal Wat Tamwil*, i.e. a microfinance institution operating at the village level
BPR	:	*Badan Perkreditan Rakyat*, i.e. Community Credit Bank
BPRS	:	*Badan Perkredit Rakyat Syariah*, i.e. Sharia Rural Banks
BRR	:	*Badan Rehabilitasi dan Rekonstruksi, i.e.* Agency for the Reconstruction and Rehabilitation of Aceh and Nias
BUKP	:	*Badan Usaha Kredit Pedesaan*, i.e. Rural Credit Facility
CHF	:	Cooperative Housing Foundation
CBO	:	Community-Based Organization
CSO	:	Civil Society Organization
CSP	:	Community Settlement Plans
CSR	:	Corporate Social Responsibility
DALA	:	Damage and Losses Assessment
GoI	:	Government of Indonesia
GIZ	:	*Deutsche Gesellschaft fur Internationale Zusammenarbeit GmbH*, i.e. German International Assistance Agency
HFA	:	Hyogo Framework for Action
IDR	:	Indonesian Rupiah
ILFAD	:	Indonesia Liquidity Facility after Disaster
IOM	:	International Organization for Migration
JRF	:	Java Reconstruction Fund
KMK	:	*Konsultan Manajemen Kabupaten*, i.e. Consultant Management

		Regency
Kopsyah	:	*Koperasi Syariah*, i.e. Sharia Cooperative
KSP	:	*Koperasi Simpan Pinjam*, i.e. Cooperative for Saving and Loans
LKM	:	*Lembaga Keuangan Mikro*, i.e. Microfinance Institutions (MFIs)
MSMEs	:	Micro, Small and Medium Enterprises
NGO	:	Non-Governmental Organization
NPL	:	Non-Performing Loans
PDRB	:	*Produk Domestik Regional Bruto*, i.e. Gross Regional Domestic Product (GRDP)
PERBARINDO	:	*Persatuan BPR Seluruh Indonesia*, i.e. Indonesia Rural Bank Associations
PNM	:	*PT. Permodalan Nasional Madani*, i.e. A state-owned Financial Institution
PNPM	:	*Program Nasional Pemberdayaan Masyarakat*, i.e. National Community Empowerment Program
PokMas	:	*Kelompok Masyarakat*, i.e. a group of people in communities
REKOMPAK	:	*Rehabilitasi dan Rekonstruksi Masyarakat dan Permukiman berbasis Komunitas*, i.e. Community-based Settlement Rehabilitation and Reconstruction Project/CSRRP
TTN	:	*Tim Teknis Nasional*, i.e. National Technical Team

Chapter 1. Introduction

1.1 Motivation

By their very nature, disasters are aperiodic and catastrophic, making them difficult and expensive to plan for, and causing enormous suffering, with long-lasting social and economic consequences. Disaster management essentially consists of three phases. Firstly, to prepare communities for a potential disaster through planning, design and engineering as well as preparedness drills. For example, urban planning can take into account flood pathways, houses can be designed to withstand earthquakes, and transport infrastructure engineered to prevent collapse. Secondly, the response to disasters should rescue people affected, alleviate suffering and fulfil basic needs within the emergency relief stage. Thirdly, post-disaster recovery among others involves housing reconstruction, rebuilding infrastructure, and revitalising local economies. This thesis focuses on the third component of disaster management: specifically, on how best to enable local businesses to overcome the impact of disasters and accelerate the local economic recovery. It uses Indonesia as a case study, drawing on experiences of recovery in Bantul Regency, and explores the importance of social capital and networks. In conclusion, the thesis proposes a model, governance platform and recommendations for creating resilient communities. This chapter starts with an overview of social capital, which provides the theoretical motivation of the thesis and the basis for the research questions.

Nearly two decades ago, Putnam (2000) published a book on social capital based on longitudinal research of the social networks of American communities, Bowling Alone: the Collapse and Revival of American Community. This book provides an analysis of how social relations are a determinant for the revival (or the collapse) of communities. At around the same time, Lin (2002) strengthened the theory on how social capital acts as a driver of social actions in communities. However, prior to these seminal works, preceding theorists had already linked together variants of social capital, including, but not limited to, environmental governance (Ostrom, 1990), human capital development (Coleman, 2000), and economic growth (Helliwell and Putnam, 2000).

The term ‘social capital’ was first mentioned by L.J. Hanifan (1920), followed by T.W Schultz (1961) and J. Jacobs (1961), then by M. Granovetter (1971) and Bourdieu (1977, as cited in Field, 2003). Furthermore, Bourdieu defined social capital as the

‘capital of social relationships’, the central thesis of which can be summarized simply using two words: relationships matter (Field, 2003, p. 15). In principle, social capital is anchored to the family of capital theories, which state that capital is the accumulation of money, and that when invested, provides profitable returns in the future. Accordingly, the premise behind the notion of social capital is that social capital is the investment in social relations, with the expectation of returns in the future. Through this extension of classical theory to neo-capital theory, it is assumed that individuals engage in interactions and networking in order to produce profit (Lin, 2002, p. 19).

Only a few scholars discuss social network and capital analysis in the context of disasters, and far fewer in the context of recovery phases (Kapucu and Demiroz, 2011; Kapucu, 2014). Olshansky (2005) highlighted that ‘recovery’ is the least explored topic, and stated that ‘recovery studies are few, and systematic comparative studies are fewer’. Berke et al. (1993) argued that this condition made recovery the most poorly understood topic of the phases in disaster management. In this thesis, disasters are defined ‘as social occasions, that they are disruptive, and they are related to social change’ (Perry, 2005, p. 315). Nevertheless, a crisis will be acknowledged as a disaster whenever it requires a response that is beyond the maximum coping capacity of the community; and disastrous events impact mostly on poorer and more vulnerable communities.

Based on vulnerability theory, the impact of disasters is unequal for people, influenced by, amongst other things: disproportionate power, economic conditions, political position, or social privilege (McEntire, David A., 2014). From an economic perspective, a lack of resources, or access to those resources, will limit people’s ability to take precautionary actions before, during and after the disruptive event. When disaster strikes, long-term recovery can take years, strongly affecting economic activities and the recovery of the small business community (Arendt and Alesch, 2015, p. 87). In addition, recovery is influenced by societal resources and organizational capability; and the effective recovery is defined as a function of how well such resources can be mobilised to facilitate the recovery process (Johnston et al., 2012, p. 252-3).

According to Schwab (2014, p. 6), due to the inherent complexity of post-disaster governance, there is a need for local communities to take local ownership of their situation and gain a fuller understanding of the relationships between stakeholders. In the recovery phase, networks provide a basis for social cohesion, as they enable people and even agencies to cooperate with one another. The (social) network perspective

focuses on relationships among social entities and on the patterns and implications of these relationships (Wasserman and Faust, 1994, p. 3). Putnam (2000) viewed social capital as a set of 'horizontal associations' among people that have an effect on the productivity of the community. Two assumptions underlie this concept: the first is that networks and norms are empirically associated; and second, that they have important economic consequences.

The interrelation between social networks, social capital and community in a sociological context has been mapped by Moody and Paxton (2009, p. 1492), based on a review of literature published between 1963 and 2001 (see Chapter 2). Thus, referring to that research, the key feature of social capital that will be explored in this thesis is networks, since the social capital of a network facilitates coordination and cooperation for the mutual benefit of the community at the micro-level of inter-individual and local contexts, and at the aggregate level of intra-organizational post-disaster governance (i.e. the micro-meso-macro levels). Mutual benefit, in terms of disaster recovery, is reflected, on the one hand, in a community's dependency on its economy for survival, and on the other hand, in dependency on the community within which they exist for their viability (Schwab, 2014).

In order to investigate successful collaborative governance within the context of disasters, Indonesia offers a unique opportunity for case studies. There are several reasons for this. First, Indonesia is the fourth most populous country in the world and keeps growing. According to the National Bureau for Statistics (BPS), the population of Indonesia counted only 60.7 million in the 1930s but is projected to reach 305.6 million by 2035, constitutes a five-fold increase within a century (BPS, 2013a, p. 57). A growing population also means that people are increasingly exposed to the risk of disaster (Kusumasari, 2014a), especially considering that 67 percent of the population are concentrated in coastal urban areas (BPS, 2013a), where the risk of storm and tsunami damage is particularly high. The Indonesian Index for Disaster Risk (*Indeks Risiko Bencana Indonesia/IRBI*) shows that around 65 percent of the total of 497 regencies/cities within the 34 provinces are categorized as high risk, while the remaining 35 percent are classified as medium risk (BNPB, 2013). Second, the Government of Indonesia (GoI) suffered 167,741.8 billion rupiah of loss and damage as a result of disasters between 2000 and 2014 (BAPPENAS, 2014a, p. 3). The implication of such disruption and economic loss is that the impact of disasters will hinder the development of disaster-prone regions in Indonesia. Third, there has been much progress in disaster risk reduction (DRR) programmes in Indonesia, for which

President Yudhoyono was awarded the first Global Champion for DRR in 2011 (UNISDR, 2011).

Furthermore, this research specifically uses Bantul Regency in Yogyakarta Province as a case study to explore a multi-level collaborative network and governance, with a focus on the local communities, the micro level and up to the macro level. The case study investigates social capital and network theories, as well as relevant recovery and governance concepts, based on an empirical exploration of local economic recovery in disaster settings, in particular the Yogyakarta earthquake that occurred in 2006. The recovery took place less than two years, and thus the case reflects medium-term recovery outcomes of 10 years, as well as 'an extreme'[1] case for a relatively fast recovery process.

The disaster in Bantul Regency is categorized as an upper-middle disaster; that is a certain level of disaster which still provides a space for community engagement either within the recovery process or further implementation (see Sub-section 5.5.2 in Chapter 5). In terms of economic recovery, Bantul Regency has shown progressive development of micro, small and medium enterprises (i.e. MSME), primarily due to its well-known tourism destinations and handicraft shopping clusters. Previous research (Sunarti et al., 2013) has argued that Bantul Regency is considered to have leadership and socio-cultural value (i.e. the Javanese culture), which is assumed to have significance for the recovery process through the existence of networks (explored further in Chapter 6).

Following this introduction section which aims to outline the underpinning theories that provide motivation for the context of the case study, the remainder of this chapter consists of three sections. The second presents the research questions and objectives that guide the empirical components of this thesis. The third section of the chapter describes the structure and scope of the thesis; and finally, the last section discuss the thesis outputs and contribution.

1.2 Research Questions and Objectives

This thesis aims to (1) explore the existing collaborative networks and the underlying mechanisms that facilitate post-disaster recovery governance; (2) investigate the

[1] The term 'Extreme case' refers to an explanation of case study categories based on Bradshaw, M. and Stratford, E. 2000. Qualitative Research Design and Rigour. In: Hay, I. ed. *Qualitative research methods in human geography.* South Melbourne, Vic; Oxford: Oxford University Press.

significance of networks in reviving the local economy; and (3) reformulate the concept of resilience for recovery so that this can be integrated into the development process. The overarching research question is '*to what extent can disaster recovery be enhanced through collaborative governance and social networks to significantly influence the revival of a local economy*?'. The overarching research question is answered using a series of sub questions, each of which forms the basis for the empirical work in the thesis, as follows:

Sub question 1: 'How is the regulatory and institutional framework in the recovery phase organized so as to revive the local economy?'

The objectives of the empirical work are as follows: (1) to explore the regulatory framework and post-disaster issues in the general context of disaster; (2) to investigate Indonesian national policy-based networks at the macro level; and (3) to provide an overview of recovery-related policies and implementation to revive the local economy. This sub-question is answered in Chapter 5.

Sub question 2: 'What were the multiphase governance and multilevel networks that operated during the economic revival in Bantul after the 2006 Yogyakarta earthquake?'

The objectives of this question are as follows: (1) to explore disaster recovery governance during the recovery phase in Bantul in the aftermath of the Yogyakarta earthquake; (2) to analyze the existing networks at an aggregate level, and to explore the mechanisms that supported the recovery in the Bantul-Yogyakarta case study; and (3) to understand recovery and unpack the principles that facilitate disaster recovery governance needed to revive the local economy. This sub-question is explored in Chapter 6.

Sub question 3: 'How did the local-community actors in Bantul Regency –Yogyakarta Province, initiate, cooperate and network to revive the local economy, at the level of micro, small and medium enterprises (i.e. MSMEs)?'

The objectives of this question are as follows: (1) to explore post-disaster recovery governance for MSMEs and the local economy of Bantul Regency, including an empirical investigation of networks, risk perceptions and implementation; and (2) to investigate the local economic recovery in Bantul Regency and to understand the lessons and strategies used to create local economic revival. This sub-question is investigated in Chapter 7.

Sub question 4: 'How can collaborative governance and networks in post-disaster recovery contribute to local economic revival and resilient recovery for development?'

The objectives of this question are as follows: (1) to construct a conceptual model for integrating post-disaster recovery into sustainable development policy based on case study and the essential elements underpinning resilient recovery; (2) to develop a framework for collaborative governance in disaster recovery to be integrated into development policy based on knowledge derived from a case study and through identifying the relevant factors; and (3) to formulate guidelines that would allow stakeholders to integrate resilient recovery into development policy. This sub--question is addressed in Chapter 8.

1.3 Research Contribution and Outputs

This study aims to reconceptualise the model and framework of post-disaster recovery governance to revive the local economy in the context of Indonesia. The recommendations include some updates for existing concepts used, for example: the importance of the resilient recovery for further development process which focusing on the local economic recovery. It is hoped that the results can be feasibly replicated or rigorously tested to improve post-disaster recovery in other Indonesian disaster areas, and it may also be suitable for other developing countries that have similar characteristics to Indonesia.

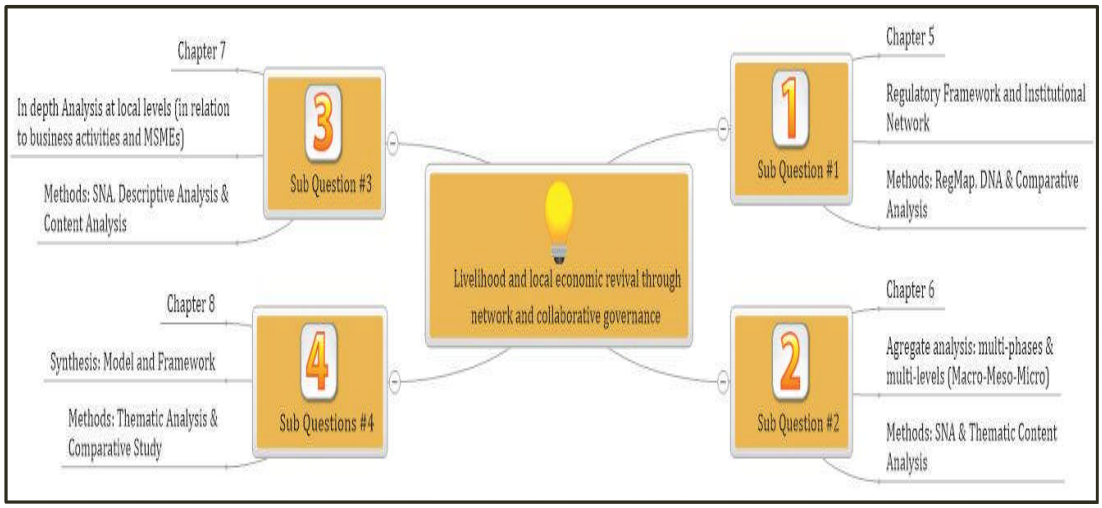
The originality of the research lies in its attempt to link the concepts of social capital, networks and governance to local economy, resilience and development, in the context of post-disaster recovery. The aim is to reconceptualise existing models and frameworks to improve development cycles in the recovery of disaster-hit areas. In addition the application of integrated mixed-methods including analysis of multi-level governance to trace the underlying mechanisms are also a novel contribution offered by this thesis.

1.4 Research Structure

The scope of the thesis is within the theme of post disaster networks and governance, specifically in the recovery phase. The focus of the research is local economic revival and resilient recovery for development; and the case of micro, small and medium enterprises (MSMEs) has been used to investigate this in depth. Furthermore, the complete research matrix of the thesis, consisting of respective methods, instruments

and data sources, can be seen in Appendix A. Meanwhile, below presents a mind map of this thesis with the remainder structure of this thesis, as follows.

Figure 1.1. Mind Map of Empirical Chapters



Chapter2, 'Theoretical Framework', outlines the theoretical framework, starting with an explanation of social capital and network theory in the context of individuals, local communities and the aggregate level. This is followed by a discussion of network theory in the context of post-disaster recovery, and finally a discussion on network theory in the context of development. In addition, an overview of previous studies will be presented and discussion on gaps in knowledge will be explored in more depth. The gaps are used to derive the four sub-questions discussed above, which are answered in the four different empirical chapters (from Chapters 5 to 8).

Chapter 3, 'Overview of Case Study', presents an overview of the case study area chosen. It consists of two parts: an overview of the field sites, and an overview of the disaster case itself. The first section focuses on the six sub-themes: location, population density and distribution, livelihood and local economy, topography, climatology and hydrology, and disaster history. The second describes the specific case of the Yogyakarta earthquake in 2006.

Chapter 4, 'Methodology: A Case Study, Methods and Framework', describes the research design, methods, and framework used. The chapter explains the design of case study and mixed–methods as well as the research framework. The primary data used are derived from focus group discussions (FGD), interviews and questionnaires, whereas the secondary data is derived from information in the public domain, including reports from research centres, government and non-governmental actors,

and metadata from academic articles. The participants involved consist of experts, practitioners, central and local government officers, and persons in charge of business organizations and business entities (i.e. micro, small and medium enterprises/MSME), as well as local communities and leaders. Bantul Regency, Yogyakarta Province, Indonesia is chosen for the case study but is supplemented by other comparable disaster cases. The qualitative data is explored using thematic content analysis, by means of manual coding and/or NVIVO; the quantitative data is analysed using discourse network analysis (DNA), social network analysis (SNA), and descriptive statistical analysis.

Chapter 5, 'Understanding Disaster Recovery Governance: Indonesian Regulatory Framework and Institutional Network', reviews regulations, policies and implementation, as well as examples of Indonesian disaster governance from 2005 to 2015. This empirical chapter stands on the proposition that disasters cause complex problems, and to be able to deal with these, there needs series of collaborative work and/or network governance amongst relevant stakeholders. This empirical chapter thus serves as the first analytical chapter that provides insight into understanding the 'playing field' in the Indonesia disaster recovery constellation. For that purpose, the policies and practices related to disaster in general and post-disaster economic recovery in particular, are explored in detail. The methods of analyses applied in this chapter are regulatory mapping (RegMAP), discourse network analysis (DNA) and content analysis of interviews and reports from government and non-governmental actors.

Chapter 6, 'An Aggregate Approach for Disaster Recovery Governance: A Multiphase and Multilevel Analysis for Bantul Regency-Yogyakarta Province', investigates the networks at an aggregate level. The chapter begins with a review of the collaborative governance and aggregate networks in the case of the Bantul-Yogyakarta Earthquake. This is followed by exploration of the underlying mechanisms beneath the network that facilitate the processes that improve and revive the local economy. The method of analysis used in this chapter is social network analysis (SNA) and thematic content analysis.

Chapter 7, 'In-Depth Analysis from the Individual-Local Perspectives: Risk Perceptions, Implementations and Strategies to Revive the Bantul Regency Economy', begins with a review of the individual local network. The baseline network data was gathered through interviews and questionnaires from businesses (i.e. micro, small and medium

enterprises/MSMEs) in Bantul. This is followed by a review of the relevant programs and/or projects in Bantul District, which focuses on aspects of a) the spectrum of activities undertaken; b) local economic recovery-related activities; and c) key stakeholders. There is also an analysis of the drivers and/or determinants of the local economic recovery, based on lessons from the case study. The method of analysis used in this chapter is social network analysis (SNA) and thematic content analysis.

Chapter 8, 'The Nexus of the Resilient Recovery and Development: A Synthesis from Disaster Recovery Governance in Bantul Regency', consists of a synthesis of how the social network can facilitate the recovery process, and uncover its correlation to the revival of the local economy. The chapter explores the reconceptualization of the model and disaster governance framework toward a resilient recovery through the identification of the relevant factors that determine resilient recovery in order to improve the local economy for development. It focuses on what works, what does not work and why. For this purpose, the chapter also compares other lessons and frameworks, both from discussions on disaster and risk governance and from the discussions on collaborative governance from which the proposed framework is derived. The methods of analysis applied in this chapter are thematic content analysis and comparative analysis.

Chapter 9, 'Conclusion', presents a reflection on and discussion of the study's implications for policy and the body of knowledge that provides ten propositions for disaster recovery governance. This is followed by research limitations and the potential for future research, and completed by a closing statement.

Chapter 2. Theoretical Framework

2.1 Introduction

In Chapter 2, the series of discussions below are based on selected literature that illustrates the basic underpinning theories for the whole thesis, whilst the specific or other relevant theories are provided within each empirical chapter. The theoretical discussion starts with social capital and network theory. In this sub-section, definitions, interlinkage and applications (e.g. local and aggregate context) are further elaborated in depth. Following that, the network theory in post-disaster governance context is also discussed. In this sub-section the disaster governance and resilient recovery are explored. Subsequently, the network theory for development is finally completed the theoretical discussion. In this sub-section, the focus of discussion emphasizes on uneven development, sustainable development, well-connected community and collaborative governance.

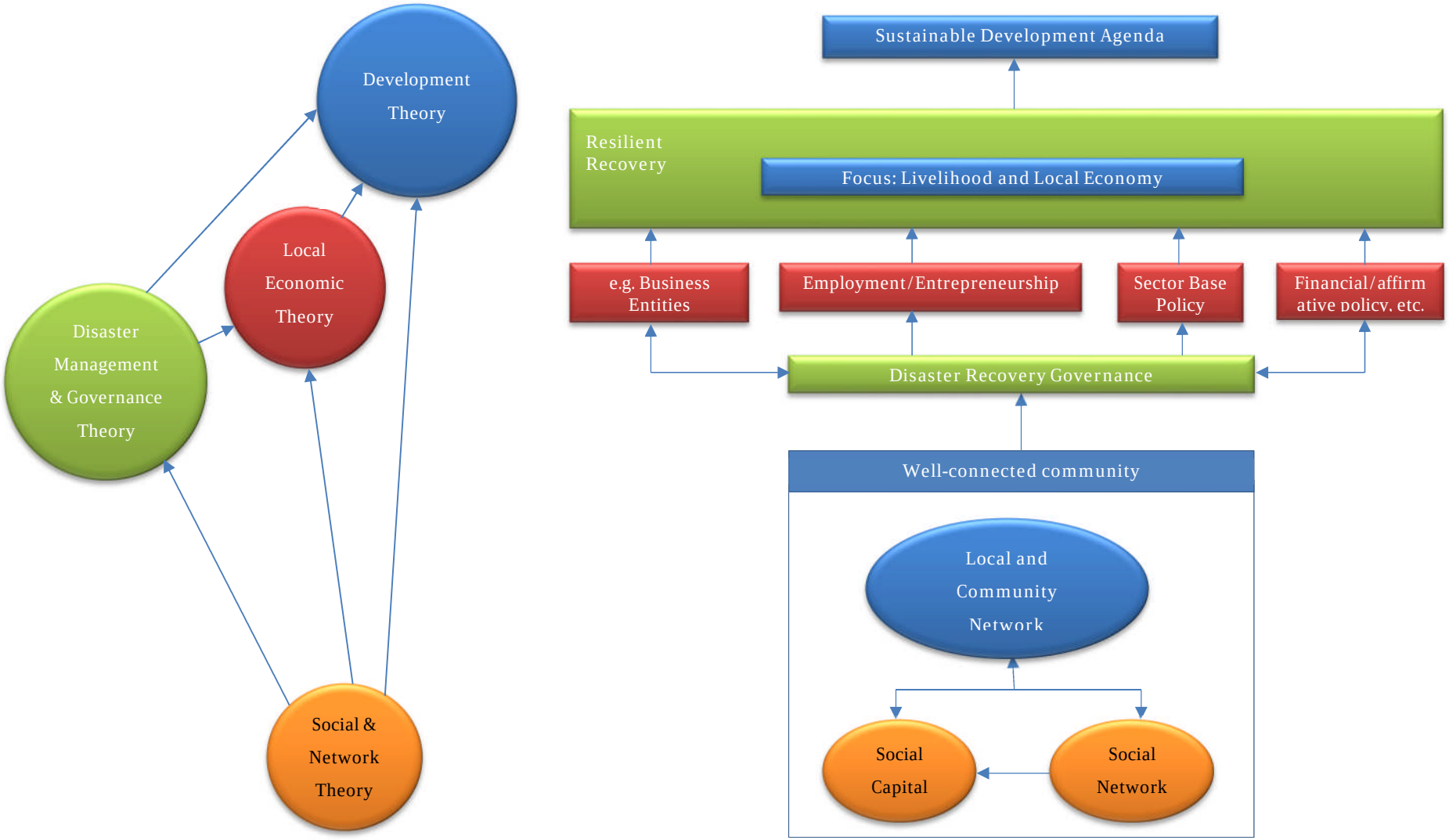
In addition to theoretical discussion, the exploration of the lacuna in extant knowledge is discussed in the last section of this chapter. This section identifies the origin of the thesis theme and boundary, and at the same time, becomes the justification of the chosen overarching research question.

Studying livelihood and local economic revival after disaster, there are some contextual characteristics that should be considered as basic assumptions. Firstly, geographical location and/or territory becomes a crucial economic factor (Semitiel García, 2006). Following that, the network, social and cultural, as well as institutional conditions, which are embedded specifically in particular areas, are expected to have an impact on socio-economic systems. Secondly, disaster is defined as a disruptive phenomenon to social lives; therefore, community is an essential unit of analysis in investigations and representative of 'social lives', as victims on the one hand and agents of change on the other. In this case, the interaction and behaviours within the community provide insight into the recovery processes underpinning livelihoods and the local economy. Thirdly, recovery processes using collaborative and networked governance, it is predicted, will contribute to the development agenda.

Based on those assumptions, the overarching research question is set out: '*to what extent can disaster recovery be enhanced through collaborative governance and social networks to significantly influence the revival of a local economy?*'. The

overarching research question is answered using a series of sub questions which connect disaster recovery to local economic revival and development. For that purpose, the theoretical framework (see Figure 2.1 below) uses a flexible sequential framework, which implies that one theory supports another theory, and vice versa. The below framework serves as a guide in the form of a diagrammatical outline used to assess the case study and its relevant activities as shown in the subsequent empirical chapters.

Figure 2.1. Theoretical Frameworks of Disaster Recovery Governance Research



2.1 Social Capital and Network Theory

2.1.1 Social Capital and Network Theory: Definitions and Interlinkages

2.1.1.1 Social Capital

Social capital: a capital captured through social relations

Social capital has been a relatively recent development in theory and research and it is increasingly influential as it has started to catch on in policy circles (Field, 2003). While earlier scholars pointed to the phenomenon of resources or capital through social relations or even employed the term social capital, it was only in the 1980s that several sociologists, including Pierre Bourdieu (1970s-1980s), James Coleman (1980s), Robert Putnam (1980s)[2] and, more recently, Nan Lin (2000s) explored the concept in some detail (Lin, 2002, p. 21). Despite their differences, all of them consider personal connections, interpersonal interaction and shared sets of values within their understandings of social capital concept.

Social capital was first mentioned by Bourdieu (1977, as cited in Field, 2003, p. 15) in terms of the 'capital of social relationships'. He believed that 'economic capital is at the root of all other types of capital' (1986, as cited in Field, 2003, p. 15) thus, the idea of social capital is anchored to the family of capital theories. The notions of capital can be traced to Marx's classic theory of capital, which provides analysis on how capital emerges from social relations between the capitalist and labourers in the process of commodity production and consumption, as a part the generation of surplus value, profit and investment.

Derived also from the theory of capital, capital is defined as a resource when it is 'invested and mobilized' in pursuit of a goal or action. From this point of view, capital can be seen from two perspectives (Lin, 2002, pp. 6-7): (1) capital as the outcome of the production process (surplus value/profit); and (2) capital as the causal factor in production (investment). Thus, capital is defined as an 'investment of resources with expected returns in the marketplace' (Lin, 2002, p. 3). The market can be economic, political, labour or community. Hence, in economic thought, the term 'capital' originally

[2] There is a growing consensus that three leading figures have made seminal contributions. However, there are certainly important differences between them. In brief, Bourdieu shares with Marxism a concern that economic capital is at the root of all other type of capital; Coleman takes as his starting point the idea of individuals acting rationally in pursuit of their interest; Putnam has inherited and developed the idea of association and civic groups as a basis of social integration and well-being.

meant an accumulated sum of money, which could be invested in the hope of a profitable return in the future.

According to Field (2003), the central thesis of social capital can be summarized in two key words: 'relationships matter', or in other words, social networks are a valuable asset. Social capital, according to Lin (2002), stresses the importance of social connections and social relations in achieving goals. Furthermore, social capital is seen as resources that are accessed through such connections and relations; and it is said to be critical to individual, social groups, organizations and community in achieving objectives. In the notion of social capital (that is capital which is captured through social relations), capital is seen as a social asset by virtue of actors' connections and access to resources in the network or group of which they are members (Lin, 2002, p. 29). Similar with Lin, Field (2003, p. 1) also pointed out that:

> *People connect through a series of networks and they tend to share common values with other members of these networks; to the extent that these networks constitute a resource, they can be seen as forming a kind of capital*

Thus, social capital is best understood by examining the mechanisms and process by which embedded resources in social network are captured as investment. According to Lin, 'it is these mechanisms and process that help bridge the conceptual gap in the understanding of the macro-micro linkage between structure and individuals'. Field (2003, p. 7) summarized this into a very clear notion, as follows:

> *The idea of social capital draws attention to the links between the micro-level of individual experiences and everyday activity and the meso-levels of institutions, associations and community. Moreover, by defining connection as a form of capital, the concept points broadly towards a set of explanations that can link the micro-, meso- and macro-levels together*

Why does social capital work?

According to Putnam (1993, p. 169, as cited in Field, 2003), 'features of social organization, such as trust, norms, and networks, [that] can improve the efficiency of society by facilitating coordinated actions'. This explains the core elements of social capital, and why social capital works. In terms of pursuing the goal, i.e. profit, it has been argued that there are four elements -information, influence, social credential, and reinforcement- that can be offered as reasons why embedded resources in social networks enhance the outcomes of actions (Serageldin and Grootaert, 2000, pp. 47-49; Lin, 2002, p. 20), as summarized below:

— *The flow of information is facilitated.* Formal and informal institutions can help avert market failure related to inadequate or inaccurate information.
— *Coordination for collective decision.* Uncoordinated or opportunistic behaviour by economic agents can also lead to market failure. The association reduces opportunistic behaviour by creating a framework within which individuals interact repeatedly and enhance trust among members.
— *These social ties may exert influence on the agents who play a critical role in decisions.* Some social ties, due to their strategic locations and positions, also carry more valued resources and exercise greater power on organizational agents' decision-making. Thus, they carry a certain weight in decision-making processes regarding individuals.
— *Social credentials.* Social ties and their acknowledged relationships to individuals may be conceived by the organization or its agents as certification of the individual's social credentials. 'Standing behind' the individual using these ties reassures the organization (and its agents) that the individual can provide added resources beyond the individual's personal capital, some of which may be useful to the organization.
— *Social relations are expected to reinforce identity and recognition.* Being assured of and recognized for one's worthiness as an individual and a member of a social group sharing similar interests and resources not only provides emotional support but also public acknowledgement of one's claim to certain resources.

Social capital: reconceptualization

As has been explained above, the premise behind the notion of social capital is rather simple and straightforward (Lin, 2002, p. 3): 'investment in social relations with expected returns in the marketplace'. Through the development of classical theory to neo-capital theory (e.g. human capital and cultural capital) it was shown that individuals engage in interactions and networking in order to produce profit (Lin, 2002, p. 19). Therefore, social capital is a kind of investment in social relationships through which resources of other actors can be accessed and borrowed (Lin, 2002, p. 24)

According to Lin (1982, as cited in Lin, 2002, p. 21), there are two types of resources that individuals can gain access to and use: personal resources and social resources. Personal resources are resources possessed by an individual and may include ownership of material, as well as symbolic goods. Social resources are resources

accessed through an individual's social connections. Depending on the extensiveness and diversity of their social connections, individuals would have differential social resources.

Social capital also includes mobilized social resources. According to Flap (1988, as cited in Lin, 2002), there are three elements of social capital: the number of people in the network; the strength of the relationship; and the resources of these people. For Coleman, social capital consists of two elements: it is an aspect of a social structure, and it facilitates certain actions of individuals within the structure. Furthermore, he argued that social capital is the resources, whether real or potential, gained from relationships. These social relationships serve important functions in facilitating the actions of individual actors; they form the basis of social capital. For this reason, social capital is not fungible across individuals or activities. In explicating the concept of social capital, three forms were identified: obligations and expectations, which depend on trustworthiness of social environment, information-flow capability of the social structure, and norms accompanied by sanctions (Coleman, 2000, p. 36).

According to MacGillivray and Walker (2000), the components of neo-capital can be broken down in terms of different types of trust, as follows:

Table 2.1. Type of Social Capital

Type of Capital	Human	Social (informal)	Social (Formal)
Type of Trust	Trust in ourselves	Trust in each other	Trust in organization
Component	Self-esteem – Self Respect – Self Confidence	Level of Trust	Number of Organizations
	Attitude	Norms	Service provided
	Skill and Knowledge	Reciprocity	Effectiveness
	Behaviour	Network and Connection	Community involvement
			Networks and partnerships

Source: MacGillivray and Walker (2000, p. 203)

Another perspective focuses on social capital at the group level, with discussion of: how certain groups develop and more or less maintain social capital as a collective asset, and how such collective assets enhance group members' life chances. Those who have discussed this include Bourdieu, Coleman, and Putnam. Bourdieu, for example, argued that social capital represented an 'aggregate of the actual or potential resources which are linked to possession of a durable network' (1980, as cited in Field, 2003, p. 17), which is made up of 'social obligations and connections'. In other words, for Bourdieu,

social capital is a collective asset shared by members of a defined group, with clear boundaries, obligations of exchange, and mutual recognition. The advantage of the social capital depends on the size of one's connections' and on the volume or amount of capital in these connections.

In summary, then, Bourdieu, Coleman, Lin, Flap, and so on, share a converging understanding about social capital, as follows (Lin, 2002, pp. 24): 'Social capital consists of resources embedded in social relations and social structure, which can be mobilized when an actor wishes to increase the likelihood of success in purposive actions'.

2.1.1.2 Bridging Network Theory toward Social Capital

Social network analysis dominates social capital research[3] (Jiang and Carroll, 2009; Moody and Paxton, 2009); some scholars have made hasty conclusions by associating social network with social capital or as part of social capital theory. Moody and Paxton (2009), argued though that both fields have experienced significant progress. However, research that explicitly links them both is relatively rare. Usually, the previous researches link the classification of 'bridging and bonding' from social capital theory with the concept of 'weak and strong ties' from social network theory (Jiang and Carroll, 2009, p. 53). However, historically, social network and social capital have different theoretical roots. In fact, although they share common ideas (Moody and Paxton, 2009, p. 1491), according to Jiang and Carroll (2009), there are few differences between a social network and social capital. It is important to understand these differences, as it prevents us making incorrect inferences.

Historically, social capital can be traced back to two lines of reasoning (Jiang and Carroll, 2009, p. 51). The first focuses on the connection between individuals and/or groups. The second focuses more on given sets of norms, social sanctioning, trusting behaviours and social support (i.e. participation, gathering, reciprocity, etc.) that comprise social systems. Social capital is viewed more as collective possession, and both of these lines are underpinned by sociological theories. On the other hand, social networks, by definition, focuses on the 'ties and networks [that] constrain resource flow by keeping it within ties and networks' (Jiang and Carroll, 2009, p. 52); resource in

[3] Moody and Paxton (2009, p. 1492-94) had mapped the interrelation between social network, social capital and community in sociological literature between year of 1963 and 2001. From the given map, it was revealed that there is an overlap between social network and social capital, either in terms of the structure of the field as well as the addressed topics.

this case could be in the form of information, economic, intellectual or emotional resources (Moody and Paxton, 2009, p. 1497). Throughout its development, social network theory has been supported by economic and management theories. Its basic proposition is that people who are well connected will gain more benefits from resources, and/or can claim resources from others; thereby, social networks tend to seek resources from individuals. Mostly social network research is related to job opportunities, economic returns, and promotion within organizations.

The network's concept had been discussed in social network theory, even before discussions of social relations became popular in social capital theory[4] (Freeman, 2004; Moody and Paxton, 2009). In addition, according to Jiang and Carroll (2009, p. 53), if we trace it back from its early conceptualization, social capital has resonances with a 'social system (i.e. content) approach' rather than discussions of network's concept. This means that the target of the social capital studies is 'the property of social systems, their origins and consequential behaviours' in pursuit of resources. Approaching social phenomena through social network analysis is claimed to be powerful, providing that the analysis uses computational ability, data mining and visualization technology (Scott, 2000). However, the social network focuses more on networks, centrality and density, as well as the benefit (within) derived from networks for social life. In addition, it tends to lack explanation of the underlying processes and mechanisms of exchange even within networks or in social systems (Jiang and Carroll, 2009; Moody and Paxton, 2009). For that reason, it is called a 'social network (i.e. structure) approach'.

In spite of their differences, social capital actually influences social networks, and vice versa (Jiang and Carroll, 2009; Moody and Paxton, 2009). On the one hand, particular positions in the network configuration will bring about a particular type of social capital. Thus it can be said that social capital is influenced by social ties as well as the underlying network configuration. On the other hand, social networks are embedded in particular social systems, since social capital will continuously shape the configuration of the network, 'how the network came to be, and how it changes' (Moody and Paxton, 2009, p. 1498). Furthermore, according to Moody and Paxton (2009, p. 1493) the social network more or less reflects what is discussed within the social capital literature. In regard to these shared ideas, which derive from different theoretical propositions,

4 According to Moody and Paxton (2009, p. 1493), 'the literature on social capital is newer than social networks and therefore comparatively sparse'. Furthermore, according to Freeman (2004), it was Jacob L Moreno and Harrison C White who introduced social network analysis in the first place in the 1930s, whilst social capital was developed by Bourdieu, Coleman and Putnam in the 1970s.

many studies have been conducted to bridge these differences (Jiang and Carroll, 2009; Moody and Paxton, 2009). Figure 2.2 shows how these theories are connected and how they overlap.

For instance, with respect to network configurations, a closed network configuration is noted as a practical way to increase the effectiveness of social norms and as a sanctioning mechanism which leads to the formation of a high social capital (Jiang and Carroll, 2009, p. 53). This is explained further by Coleman (as cited in Jiang and Carroll, 2009) through his research on the closed network of Jewish diamond traders in New York City. The closed network, it is claimed, has contributed to a reduction in malfeasance in the business environment.

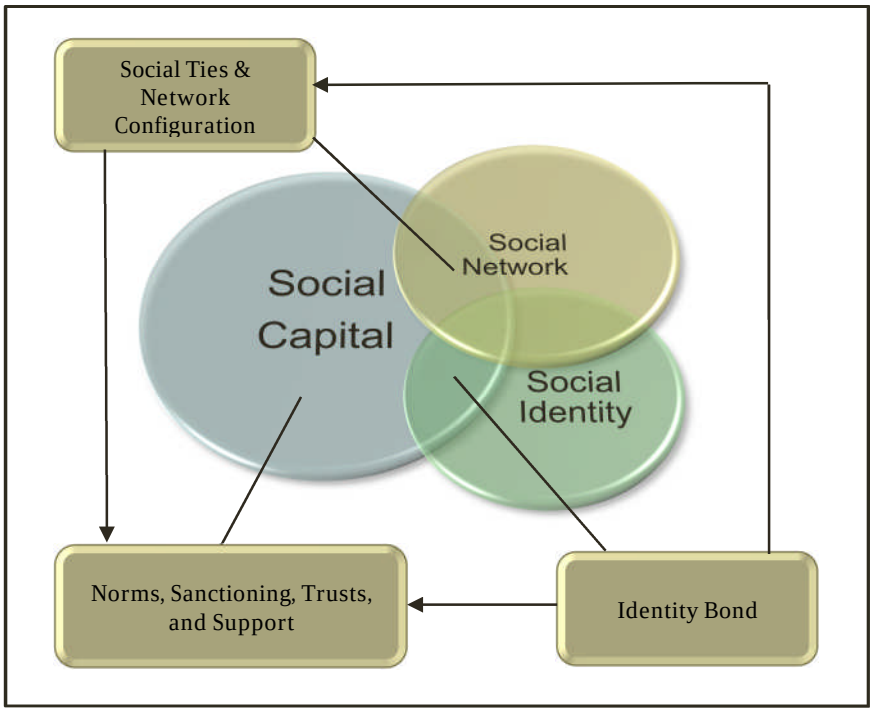
However, not all kinds of social capital should be preceded by ties in networks. There is also social capital that arises without a preceding 'direct' connection. A very good example of this is when disaster strikes a particular area in Indonesia. Most people originally from that area, wherever they live now or whether they have previously known each other or not, will have a shared bond and will support and help one another. This shows that social capital can be produced without prior contact, relations and/or interaction (Jiang and Carroll, 2009, p. 55; Moody and Paxton, 2009, p. 1494).

Jiang and Carroll (2009) proposed that there should be a way to bridge this phenomenon, namely the 'identity-bond' (see the overlapping area in the Venn diagram in Figure 2.2). Identity bond is perceived as 'a connection' without (prior) networks, even when they never meet before, during and in all likelihood in the future.. Shared social identity relies on common perspectives and knowledge, as well as geographical and historical background (e.g. school alumni, religion, tribes) that tie them to one another. Social identity in fact derives from family theory, which focuses on psychological and cognitive factors (Jiang and Carroll, 2009, p. 56).

In short, it can be concluded that social capital is mainly generated from social interactions (Jiang and Carroll, 2009, p. 53). Therefore, it cannot be built instantly, but it can be strengthened, diminished or even destroyed. However, in a particular context, social capital also involves non-network factors. Where there is no evidence of any connections among people, social network analysis cannot fully explain social capital. In the context of the community, it is likely difficult to distinguish social capital derived from shared identity from that which originates from social networks. However, if we focus too much on networks and put aside concerns with content, then what Moody

and Paxton (2009, p. 1495) discussed will likely be correct: 'we suspect that without content specificity, much of this current trend in network research risks removing the "social" from social network'. In other words, we can say that a focus on both social capital and social network will provide an in depth understanding and better prediction.

Figure 2.2. Interlinkages of Social Network, Social Capital and Social Identity



Source: adapted from Jiang and Carroll (2009, p. 57) and Moody and Paxton (2009, p. 1494)

According to Moody and Paxton (2009), the reasons that underlie the decision to bring social network analysis in discussions on social capital, and vice versa, can be viewed from two perspectives: First, from the perspective of social network analysis on social capital, and second, from the perspective of social capital analysis on social network. In the case of the former, the rigor of social network analysis, in particular its focus on connectivity and structural equivalence[5], provides a quantifiable way to explain the relationships within social capital theory. The mathematical language of social network, if adopted in social capital research, would make social capital theory more understandable, more precise and would allow for subsequent further testing of conclusions. Another input that needs to be considered is that social network analysis

[5] According to Moody and Paxton, connectivity refers to the connections in a network that carry goods (e.g. information, resources, etc.), while structure equivalence refers to nodes (individuals) occupying the same position in one or more networks. There are many other terminologies that might contribute to social capital research, such as 'homophily', 'social balance',' generalized exchange', etc.

can help to distinguish the hierarchical relations, even within an organization which has been claimed to solely consist of horizontal relations. On the other hand, in the case of the latter, a focus on social capital would fill the gaps and limitations in social network analysis, which tends to simplify social reality. However, recent research has shown that to some extent the social network model can be expanded according to the needs of social capital theories (Moody and Paxton, 2009, p. 1499). In this case, the role of social capital is to enrich social network research and to uncover elements of social relations left unexplored when purely using social network analysis. Elements of trust, reciprocity, and identity bonds may help in building a more comprehensive picture of social relations. For instance, the level of trust in relatively stable areas might be different to that in post-conflict or disaster areas. The context or situation will more or less disrupt the network configuration.

In sum, the benefit of bridging both theories in one line of inquiry lies in the strength and limitations of both theories. Social network theory provides quantifiable measures of social structure, rigorous conceptual development and detailed theory of network configuration. Meanwhile, the theory of social capital provides insights in terms of adding complexity, intensity and including context in social network models. In other words, 'social capital can contextualize network models by highlighting how context shapes relations' (Moody and Paxton, 2009, p. 1499).

2.1.1.3 Social Network

What is a social network?

The notion of social network and social network analysis has attracted the attention of many researchers from different backgrounds and has been used widely in social and behavioural sciences (including psychology, sociology and anthropology), as well as economics, marketing and industrial engineering. However, the pioneers of social network analysis came from social psychology and sociology, namely: Jacob Moreno, Cartwright, Newcomb and Bavelas, Harrison White, Mark Granovetter; and anthropology, like W. Lloyd Warner, George Homans, Ronald Breiger, Barnes and Mitchell (Wasserman and Faust, 1994; Freeman, 2004). Thus, social network analysis, has been an interdisciplinary method from its beginnings (Knoke and Yang, 2008).

Social Network analysis is based on an assumption of the importance of relationships among interacting units, and the relationship defined by linkages among units are a

fundamental component of network theories. According to Wasserman and Faust (1994, p. 4), there are few a principles, as follows:

(1) Actors and their actions are viewed as interdependent rather than independent, autonomous units;
(2) Relational ties (linkages) between actors are channels for the transfer or 'flow' of resources (either material or non-material);
(3) Network models focussing on individuals view the network structural environment as providing opportunities for, or constraints on, individual action;
(4) Network models conceptualize structure (social, economic, political, and so forth) as lasting patterns of relations among actors

The social network perspective focuses on relationships among social entities, and on the patterns and implications of these relationships. Being in a node of a network directly and indirectly provides potential access to other nodes (actors) in the social network. Since individual actors may be embedded in hierarchy structures and other networks, they bring to bear resources embedded in the positions of these hierarchies as well. For example, individual actors may interact because of their shared interest in scholarships or grants, but they also bring the interactional context other than their personal and positional resources, such as affiliations with religious institutions and political parties, as well as the networks and resources of their spouses, relatives, friends and fellow workers.

In social network analysis, the ties may be any relationship existing between units, for example: kinship, material transaction, flow of resources and support, behaviour interactions, group co-memberships, or the affective evaluation of one person by another. Although social network analysis can be applied widely, it cannot be divorced from the main theoretical and empirical concern of social research. Theoretical notions have also provided impetus for the development of network methods. Some of the theoretical concepts that have motivated development of specific network analysis methods include: social group, isolate, popularity, liaison, prestige, balance, transitivity, clique, sub-group, social cohesion, social position, social role, reciprocity, mutuality, exchange, influence, dominance, and conformity (Wasserman and Faust, 1994, p. 14).

Network models can be used for: 1) formal description (of theories and concepts); and 2) evaluation and testing. In terms of evaluation and testing, network models may be used to test theories about relational process or structures. Such theories posit specific structural outcomes, which may then be evaluated against observed network data

(Wasserman and Faust, 1994, p. 4). For example, a study of patterns of trade among nations to see whether or not the world economic system exhibits a core-periphery structure. In short, the central objectives of network analysis are 'to measure and represent these structural relations accurately, and to explain why they occur and what are their consequences' (Knoke and Yang, 2008, p. 4).

How do networks make things happen?

How do networks make things happen, especially in terms of economic transaction? This question actually has already been answered in our daily lives, as when a person want to make something happen, many people will ignore the formal procedures and responsibilities, and choose to talk to someone they know.

A simple illustration in everyday lives is if they look for someone to fix their washing machine, or move home, people tend to talk to people they know. They call help from friends, family and acquaintances or ask for recommendations for services. So, people's networks really do count (Field, 2003). Thus, it is the case that 'it is who you know as well as what you know' that makes a difference in life and society' (Field, 2003, p. 2); the more people you know, and the more you share a common outlook with them, the richer you are in social capital (Lin, 2002; Field, 2003). Of course, just knowing people is not enough if they do not feel obliged to help. Field (2003, p. 3) argued that if they do share values, they are much more likely to cooperate to achieve mutual goals. Putnam (1993, as cited in Serageldin and Grootaert, 2000, p. 45-46) viewed social capital as a set of 'horizontal associations' among people who have an effect on the productivity of the community. In this definition, the key feature of social capital is that it facilitates coordination and cooperation for the mutual benefit of the members of association.

2.1.1.4 Controversy in Social Capital and Network Research

There is controversy when attempting to generate coherent social capital theory that remains unexplored or debatable. This is structured as follows (Lin, 2002, pp. 26-28):

(1) Social capital: collective or individual assets? (Coleman, Putnam)
(2) Social capital: closed or open networks? (Bourdieu, Coleman, Putnam)
(3) Functional and/or measurement issues (Coleman)

Most scholars agree that social capital involves both collective and individual goods (Lin, 2002, p. 26); that is, institutionalized social relations in which embedded resources are expected to benefit both the collective and the individual in the collective.

However, according to Lin (2002, p. 26), social capital as a relational asset must be distinguished from collective assets and goods such as culture, norm, trust and so on. Though a causal proposition may be formulated (e.g. trust might promote relations and networks), it should not be assumed that they are all alternative forms of social capital.

Another controversy exists in discussions of the extent to which a network is closed and the density of social relations and social networks. Bourdieu believed that social capital is related to dominant positions and solidarity, which in this case is influenced by a clear demarcation of the group, hence, a closed and dense group are required. In addition, Coleman also agreed that network closure is a distinct advantage of social capital, because he believed that it will maintain and enhance trust, norms, authority, sanctions, and so on.

However, Lin (2002) argued that density or closure is not necessary for the effective operation of social capital, nor is it realistic. Furthermore, it is explained that social networks have stressed the importance of bridges in networks in facilitating information and influence flows. To argue that closure or density is a requirement for social capital is to deny the significance of bridges, structural holes, or weaker ties. In line with this view, Field (2003, p. 3) points out that 'social relationships can sometimes imply to exclude and deny as well as include and enable'. At the same time it can also serve as a 'liability as well as an asset' (Woolcock and Narayan, 2000, p. 226).

The main reason to choose a dense and closed network is because of interest to preserve or maintain resources. According to Max Weber (as cited in Parkin, 1982, p. 100), social closure means 'the process by which various groups attempt to improve their lot by restricting access to rewards and privileges to a limited circle'. He therefore explained that exclusionary social closure is thus action by design to secure for itself certain resources and advantages at the expense of other groups. On the other hand, searching for and obtaining resources, such as a better job, and accessing and extending bridges in the network should be useful. Rather than making the assertion that closed or open networks are required, it would be theoretically more viable (Lin, 2002, p. 27):

> *(1) to conceptualize for what outcomes and under what conditions a denser or sparser network might generate a better return and;*
>
> *(2) to postulate deduced hypotheses (e.g. a denser network would be more likely to promote the sharing of resources, which in turn would maintain group or individual resources; or an open network would be more likely to access advantaged positions and resources, which in turn would enhance the opportunity to obtain additional resources) for empirical examination*

A third controversy that required clarification is Coleman's statement (Lin, 2002, p. 28) which implicitly said that the potential causal explanation of social capital can be captured only by its effects. Lin (2002) criticized this on the grounds that it would be impossible to build a theory in which causal and effectual factors are merged into a singular function. This is not to deny that functional relationships may be hypothesized (e.g. resources embedded in social networks make it easier to obtain better jobs). But the two concepts must be treated as separate entities, with independent measurements (e.g. social capital is the investment in social relations, and better jobs are represented by occupational status or supervisory position).

Another issue regarding this is how to measure social capital and its impact (i.e. a measurement issue) in comparison to other tangible capitals. So far, the various capitals have been largely thought of in strictly economic terms: their value was measurable, their worth could be added up and compared, the relationship between inputs and outputs was a direct one, and any changes in value could be accounted for in terms of a common currency. Social connections, though, are not easily reduced to a simple set of common denominators, and much of the academic discussion has taken place outside the world of economics, residing largely with social and political scientists, educationalist and historians (Field, 2003, p. 12).

Coleman (1988, as cited in Fevre, 2000, p. 103) claimed that 'the role of culture, and particularly spontaneous sociability, has been greatly underestimated by conventional economic analysis in explaining the large variations among society that are otherwise at a similar levels of endowment'. This claim led to the idea that social capital could make a vital contribution to economic growth and prosperity. However, Fevre (2000, p. 109) was pessimistic about this idea and pointed out there is still dispute on how the terminology of 'relationship' becomes 'social capital'. He explained that even where there is a relationship between social capital and economic performance, this is no guarantee that it will be always necessary to economic development. Thus, he pointed out that the extent and nature of any relationship between social capital and economic development should always be a matter for empirical enquiry. In addition, Bourdieu (1986, as cited in Field, 2003, p. 16) argued, the more transparent the economic value, the greater the convertibility but the lower its validity as a source of social differentiation.

2.1.2 Network Theory in Individual and Local Community Context

2.1.2.1 Trust – Social Relation – Reciprocity

Svendsen and Svendsen (2009) argue that intangible forms of capital, such as cultural and social capital, should be accounted for alongside the traditional and visible capitals such as physical and economic capitals. Social capital is the willingness of society to share values and to trust each other (Field, 2003), and therefore leads to willingness to cooperate with other people (Svendsen and Svendsen, 2009). According to Silvia (2011, p. 43), 'trust is the glue that holds the network together'. Meanwhile, Ostrom and Ahn (2009, p, 22) argue that trust may be enhanced 'when individuals are trustworthy, are networked with one another and are within institutions that reward honest behavior'. Through this arrangement, people will become willing to suspend the conflict if there is a difference. Trust can thus overcome problems that may arise during the process due to different organizational cultures, operating procedures, perspectives, and goals for the network (Silvia, 2011).

Besides trust, various other forms of intangible capital including: norms, social relations, reciprocity, tolerance, optimism, and many more, can also improve the efficiency of society to facilitate coordinated action (Putnam, 2000). Reciprocity is broadly defined as an internalized personal moral norms as well a pattern of social exchange (Ostrom and Ahn, 2009). As an illustration, Helliwell and Putnam (2000) investigated the reason why the northern parts of Italy have been richer than the southern parts over the last several centuries. Recent research has shown that differences in per capita income are matched by differences in the societal structure, with horizontal structures common in the north and hierarchical forms common in the south, and by differences in the extent of civic community, citizen involvement and governmental efficiency.

Further research was then undertaken, this time to investigate the convergence among Italian regions from 1950s to the early 1980s and the divergence that started in 1983. The hypothesis is that some Italian regions have been able to establish and maintain higher levels of output per capita by virtue of greater endowments of social capital. As a result, it was confirmed that convergence is faster, and equilibrium income levels higher, in regions with more social capital, using any of three measures – civic community, effectiveness of regional development, and citizen satisfaction with their regional governments (Helliwell and Putnam, 2000, p. 265). Social capital became one

of the key assets for community resilience (Guarnacci, 2016), and subsequently resilience also matters for a better recovery (see Sub-section 2.3.2.2). Thus, this is relevant to the context of disasters, where the goal of the recovery process is to begin recovery immediately and for the improvement of life in the future (Kapucu, 2008),

2.1.2.2 Local Network for a Well-Connected Community

Social capital is defined as 'the non-contractual ability of a community to increase the externality of its resources or the actions taken by its members' (Jiang and Carroll, 2009, p. 54). The community is brought into the definition because of the assumption that social capital, as well as social networks, mostly involve community context. To investigate this, Moody and Paxton (2009, p. 1492) mapped the interrelation between social networks, social capital and community in sociological literature between 1963 and 2001. They produced a map of the topic structure for both literatures. Therein it was revealed that: (1) there is an overlap between social network and social capital, either in terms of the structure of the fields or as well as the addressed topics; and (2) 'community' became a significant research cluster in both fields.

In addition, they argued that social capital, along with social networks, helped 'to build better models of the social world' (Moody and Paxton, 2009, p. 1500). For that reason, they argued for the need to integrate insight from the 'content' aspect of social capital with the 'network structure' view from social network literature. Both theories will provide insight into whether, for instance, social networks or trust will influence interactions within communities that lead to recovery. As a result, their role is to provide hypothetical independent variables in order to explain social reality (Woolcock and Narayan, 2000). As Moody and Paxton (2009, p. 1500) concluded:

> *Similar network structures based on different contents will produce different social effects. At the same time, shared values or norms based in different network structures will produce different social effects. In short, the intersection of social capital and networks should improve our ability to model behaviour.*

Warren (1963, as cited in Berke et al., 1993) identified a community's horizontal integration as 'the structural and functional relation among the community's various social units and subsystems'. Furthermore, it was found that the relation would be equal to the lack of 'superordinate-subordinate' relationships. Community with a high degree of horizontal integration are underpinned by a strong network among them, enabled them to cooperate with one another. This would privilege them with the

possibility of becoming a problem solving entity and enabling access to policy decisions. Conversely, a community with a low degree of horizontal integration would lose this privilege. Networks provide a basis for social cohesion with people they know directly, for mutual advantage. Strictly speaking, the metaphor of social capital implies that connections can be profitable; like any other form of capital, 'you can invest in it, and you can expect a decent return on your investment' (Field, 2003, p. 12).

2.1.3 Network Theory in Aggregate Context

2.1.3.1 Networked Government and Collaborative Forms of Governance

Moynihan (2005, as cited in Kapucu, 2014) describes governance as a networked form of government that involves entities across sectors with different skills, expertise, and resources. It has become more popular and developed more with its complex institutional structures, diverse political grounds and the features of distributed knowledge and resources amongst different actors and across sectors (Ansell and Torfing, 2015). Stoker (1998) identifies five key elements of governance and its structures: (1) governance structures are comprised of both state and non-state actors; (2) boundary spanning is a common practice for dealing with public issues; (3) power dependencies and resource dependencies exist between different agencies and entities; (4) the network may be self-governed; (5) structures rely on the capacity and power of non-state actors in order to achieve better governance outcomes.

Some descriptions of governance reflect the idea that the government plays a central role in engaging other sectors, while others, such as those by Rhodes (1996), argue that the state plays a minimal role. Other descriptions of governance identify the changing role of the public, private, and non-profit sectors, where inter-dependence becomes inevitable and the blurring of sectoral boundaries becomes the norm (Stoker, 1998).

In addition, some scholars do not differentiate between collaborative public management, interactive governance, network governance and collaborative governance (Kapucu, 2014; Ansell and Torfing, 2015). Much like governance, 'coordination' or 'collaboration' between entities and networks can also take various forms. Meanwhile, in the UK, the popular term to represent collaboration is 'joined-up'. However, many other words are also used to describe cross-organizational working, namely: partnership, alliance, cooperation, and network, as well as joint-working (Huxham et al., 2000, p. 339). Brown and Keast (2003, as cited in Kapucu, 2014) describe cooperative networks as reflective of informal short-term relationships

between entities, coordinative networks as arenas for joint working, decision-making and collective action for limited time action, and collaborative networks as arenas for more formal, long-term and sustainable relationships with a high level of inter-organizational trust and familiarity.

However, Kapucu (2014) suggests that although these terms are very similar and may follow similar characteristics and processes, in essence they are fairly different. Collaborative governance has a broader meaning compared to collaborative public management, which clearly focuses on managing localities and holds public agencies and their roles in the collaborative arrangement as central and essential. Collaborative governance, on the other hand, has a broader, global appeal that includes collaborative public management, network and inter-organizational as well as inter-jurisdictional cooperation and collaboration.

2.1.3.2 Collaborative Governance

Collaborative governance is a form of governance where both public and private entities are involved in deliberative, collective and consensus-oriented decision-making in order to gain a joint production of work output, policy, or solution (Ansell and Gash, 2008; Emerson et al., 2012). Ansell and Gash (2008) identify six conditions for collaborative governance: (1) it is initiated by the government or a government agency, who plays a leadership role, but participants include non-governmental agencies and other actors; (2) there is direct and deliberative engagement in decision-making by both state and non-state actors; (3) formalized structures to organize, meet and engage with each other are created; (5) decisions are made through dialog, deliberation and consensus; and (6) collaborative governance is aimed at improving public policy or public management. They also identify the difference between consultative techniques and collaborative engagement techniques, which reflect two-way communication and multilateral engagement and emphasize their importance in effective collaborative governance.

There is a growing body of literature exploring the terms of collaborative governance, either at the local, sub-national, national or global scales (Ansell and Torfing, 2015), and which then examines the process of forming more complex multi-level governance. Ansell and Torfing (2015) furthermore argue that the appropriate scale of governance network and forms of collaborative work are essential as scale inappropriateness might lead to failure of policy development.

In addition, collaborative leaderships is essential, and is expected to be able to guide the entire entities within the network toward the accomplishment of shared goals (Silvia, 2011). Silvia and McGuire (2010, as cited in Silvia, 2011, p. 67) argue that there are fundamental differences between leadership in network and in hierarchy settings. Within the first, the leader spends significantly more time on people-oriented behaviours, including creating trust, maintaining close social relations, treating people equally, etc. Conversely, for the latter, the leader focused the time more on managerial tasking, such as scheduling, assigning, and internal coordination.

2.2 Network Theory in Post-Disaster Governance Context

2.2.1 Disaster Governance: Phases and Transition

2.2.1.1 What is Disaster

Disaster is defined differently by many scholars. However, Perry (2005, p. 315) summarized definitions from a social point of view from many other scholars and practitioners, as follows: 'disasters are defined as social occasions, [that] they are disruptive, and they are related to social change'. He explained further that a context of social change refers to human and institutional adaptability. Meanwhile from an environmental perspective, Ride and Bretherton (2011, p. 14) viewed a natural disaster as an environmental system disruption that involves an interaction between humans, vulnerability[6], and then nature itself. Natural disasters could be in the form of volcanic eruptions, earthquakes, floods, landslides, and fires.

Disaster is classified as a disastrous event if it has a certain impact on human activities and lives. With the exception only of drought, most natural disasters occur in days, hours, even minutes. Some, such as earthquakes, occur with almost no warning at all (Schwab, 2014, p. 26). According to Anderson (1985), there is a difference between a crisis (whether natural or political) and a disaster. She argued that a crisis is a more predictable event than a disaster, since the phenomenon has happened frequently in certain areas. Thus, not all crises become disasters; moreover, disastrous events mostly impact poorer and vulnerable areas. In short, 'crises become disasters only when they outstrip the capacity of society to cope with them' (p. 46).

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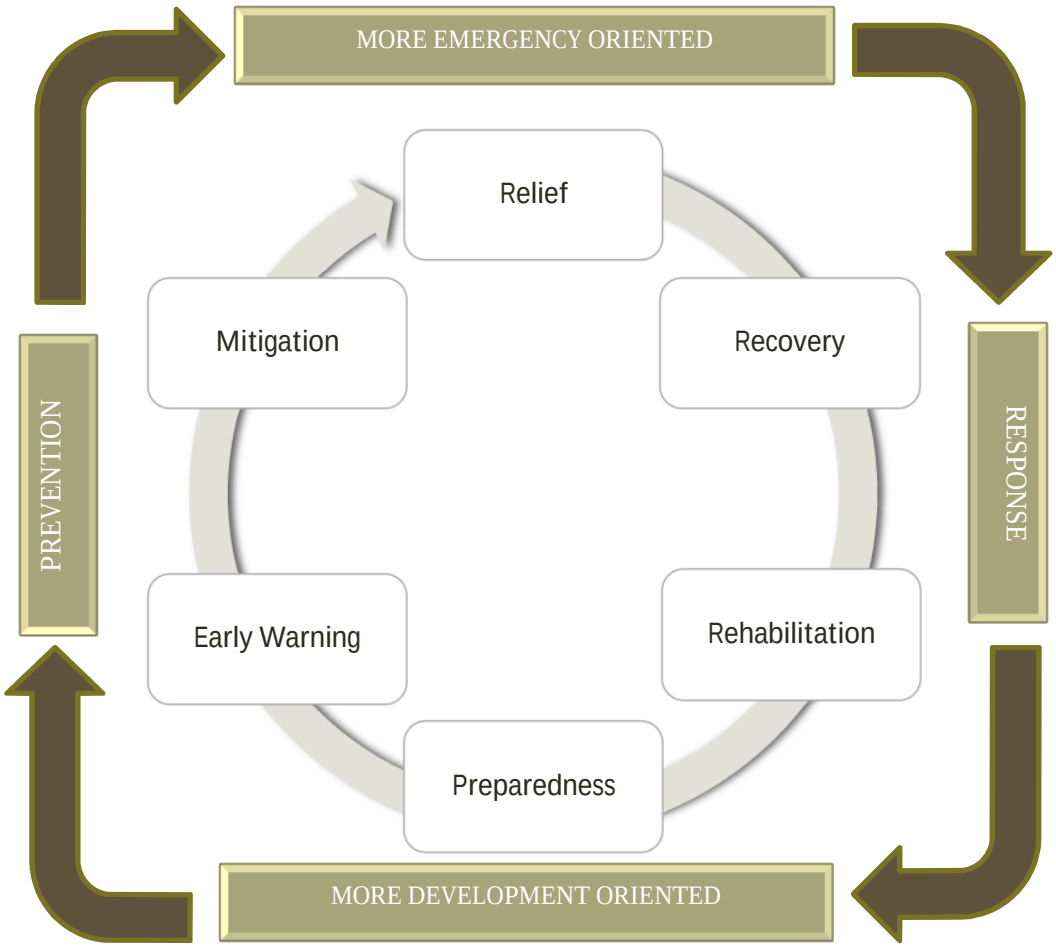
6 According to ISDR on Disaster Risk Reduction Global Review, 2007, vulnerability can be broadly defined as a measure of capacity to absorb the impact and recovery from hazard event and is conditioned by range of physical, social, economic and environmental factors or processes

2.2.1.2 Disaster Management Cycle

The disaster management cycle (see Figure 2.3 below), in terms of the progression of disaster-related activities, can be divided into preparedness, early warning, mitigation, relief, recovery and rehabilitation (Collins, 2009, p. 27). Collins (2009) explains that preparedness is defined as readiness for disaster through having an adequate level of development. Early warning is defined as the ability to predict a disaster and to ensure that people who are at risk are well-informed about the potential for disaster. Mitigation consists of measures to reduce the impact of potential disasters. Relief means to reduce the impact by restoring lives, livelihood and infrastructure to a locally acceptable standard. Rehabilitation involves dealing with the longer effects of the disaster and a focus on restoration of development. Other scholars have developed similar models, namely Frerk (1995) and Von Kotze and Holloway (1996).

According to Schwab (2014, p. 8), the traditional disaster management cycle model involves four interconnected phases: mitigation, preparedness, response, and recovery. For the best outcomes, mitigation and recovery should be integrated through effective planning because they reinforce each other. McEntire, David A. (2014) suggests that these phases should not be understood and interpreted in a linear fashion but should instead be viewed as functional areas that usually overlap each other. Hence, the various stages of the cycle are not necessarily sequential, but can also be simultaneous. If possible, they should both also happen before the disaster. In order to reduce disaster risk, the disaster management cycle requires sustainable development solutions. In addition, there are many problems involved in the recovery process, namely intense political pressure, inadequate time, inadequate resources, and multiple and conflicting interests between groups (Berke et al., 1993). However, variations in magnitude, frequency, impact, and availability of resources, would surely foster some adaptation as the phases are enacted.

Figure 2.3. Disaster Management Cycle and Development



Source: Collins (2009, p. 27)

2.2.2 Post-Disaster Governance: Toward Resilient Recovery

2.2.2.1 Disaster Recovery: Perspectives, Definitions and Measures

Perspectives on recovery

Recovery can be approached from different points of view. Olshansky (2005) has identified recovery from the perspectives of process, urban system, economics and finance, as well as social and family impact. As a process, recovery has no definite end. This will depend on communities' expectations for post-disaster recovery, which might change over time after going through the entire process. Some of them identify recovery as 'normal', others as a 'return to pre-disaster situations', while still others will be satisfied with 'business as usual'. On some level, viewing recovery as a process would bring us to a definition by consensus; with this in mind, Olshansky (2005)

contended that 'recovery' should meet its minimum requirement, i.e. a completed housing reconstruction and economic activities functioning at pre-disaster level.

The term ‘recovery’, when used in the context of an urban system, is usually applied with reference to mega disasters, wherein a severely damaged area it caused a change to the surface and functioning of the city. The damage will surely disrupt the existing urban form, though the city might be rebuilt in the same area or not. Olshansky (2005) argued that the betterment of the city’s physical appearance would absolutely happen. However, in principle, development would follow according to the needs of the public and in response to economic reconstruction.

In terms of economics, recovery is influenced by previous socioeconomic levels: ‘the higher the socioeconomic level, the more likely households and businesses are to recover to pre-disaster levels’ (Olshansky, 2005). In addition, Olshansky (2005) argued that alongside socioeconomic levels, social networks play an important role during periods of recovery. The more integrated individuals are within networks, the faster they will recover. This is related to the fact that they can draw upon support from friends and families, which will accelerate the recovery process (Johnston et al., 2012).

Another perspective is to see disaster as a ‘value-added’ approach (Berke et al., 1993). This conventional approach sees recovery as ‘ordered, knowable and predictable’. This approach consists of four stages: (1) emergency response, including debris removal, temporary housing, and search and rescue; (2) restoring public services, including electricity, water, and telephones; (3) replacing or reconstructing capital stock to pre-disaster level; (4) initiate betterment, development and reconstruction (i.e. economic growth and local development). However, there are critiques regarding this approach. The idea that the process is linear and ordered, particularly in the context of uncertain decision making processes, is not entirely accurate. Moreover, if it involves community participation in decision-making, then this sequence cannot be strictly applied, especially when, the decision-making process often involves political interest.

Recovery: what and who?

Many practitioners and policy makers have defined recovery as ‘rebuild back, stronger than ever’ (Phillips, 2009, p. 21); Others define it as a return to normalcy. However, what is meant by ‘normal’ in the context of disaster recovery? Arendt and Alesch (2015, pp. 150-151) discussed ‘normal’ in terms of the community developing to levels of system performance reflecting those prior to the disruption and when all key functions

are being performed adequately. However, many scholars argue that recovery is not achieved merely when all of the damage and destruction are restored or replaced. As Nigg (1995, as cited in Arendt and Alesch, 2015) suggests, there should be social processes beside the outcomes desired to be achieved.

In addition, according to Johnston et al. (2012, p. 252), the main point of recovery is 'how society organizes, mobilizes and coordinates the diverse range of organizational and professional resources that can be called upon to assist recovery'. Meanwhile, according to Comfort et al. (2010, as cited in Kapucu, 2014), the recovery process is 'a complex system of interacting jurisdictions, public agencies, private and non-profit organizations, and households that are engaged in a shared effort to rebuild a community following a disaster' (pp. 669-670). Thus, recovery is no longer understood as a linear process, but more as the interactive process between decision makers and community in a broader sense, including households, businesses, various groups or institutions.

Recovery is the least-understood disaster management phase. As Schwab (2014, p. 44) argues, it involves complex management processes (i.e. restoring housing, transportation, public services, restarting economic activity as well as fostering long term community redevelopment and improvement). Recovery requires sustained commitment in rebuilding goals and objectives. This includes not only relief and short-term restoration of facilities and services but also intermediate recovery and long-term redevelopment. Furthermore, effective recovery may be enhanced by pre-event planning that identifies linkages between all four disaster management components. According to The American Planner Association (APA), in addressing any recovery situation, it is important to understand its type and scale in order to determine the necessary processes required. The term 'recovery type' refers to both the intensity of impacts and the combined social, economic, and physical process by which an area regains 'normal life' and adapts to new circumstances. Recovery types can be characterized by the physical actions around which they are centred: restoration or redevelopment (Schwab, 2014, p. 52).

It has been argued that restoration is the more common type of recovery to address disasters where a relatively small amount of damage has taken place and buildings remain largely intact and do not need replacing. Meanwhile, redevelopment is a less common recovery type to address where there has been substantial destruction of physical structures and substantial damage requiring the replacement of pre-existing

buildings to assure safe occupancy. The term recovery scale refers to the size of the area affected by the disaster in terms of geographic area, numbers of individuals and households, numbers of structures, and types of facilities that must be restored or reconstructed. However, in recovery planning, the scale used is geographic, as in neighbourhoods, districts, communities, or regions (Schwab, 2014, p. 52). The following table outlines a classification of recovery from The American Planner Association (APA).

Table 2.2. The Classification of Recovery

Scale	Type A: Restoration	Type B: Redevelopment
Can be discontinuous, involving multiple locations at each geographical scale	Characterized by limited life losses and population-economic dislocation, repairable damage, minimal land-use changes	Characterized by major life or structure losses and population-economic dislocation; demolition, reconstruction, and land-use changes; mitigation opportunities
Neighbourhoods	Level 1: Neighbourhood restoration e.g. Yountville, California, mobile home park flood wall and restoration	Level 2: Neighbourhood Redevelopment e.g. September 11 World Trade Centre Attack
Communities	Level 3: Community Restoration e.g. Oakland, California, Hill firestorm	Level 4: Community Redevelopment e.g. Greensburg, Kansas, Tornado
Regions	Level 5: Regional Restoration e.g. Northridge Earthquake	Level 6: Regional redevelopment e.g. Tohuku earthquake and tsunami

Source: Schwab (2014, p. 53)

Measuring recovery

Until now, there has not been a centralized and formal system for collecting and archiving recovery indicators, nor are there comprehensive models of the recovery process itself. Beside qualitative questions concerning 'what constitutes successful recovery', Schwab (2014, p. 14) noted that there should be careful consideration and design to determine the level of success, with a focus on 'the scale at which success will be measured, the length time involved, and who will be responsible for the evaluation'.

Thus, communities must first decide on a clear definition of recovery before they can measure it, and this definition can have numerous dimensions: environmental, physical, economic, social, and institutional, and so on. This needs to include some holistic description of the 'new normal'. It is expected that both local government and

the public can use the measurement to monitor progress and evaluate achievement (Schwab, 2014, p. 14). Whilst discussion of the detailed indicator of recovery is still ongoing, the general indicators of 'successful recovery' have been widely agreed, namely speed and quality (Olshansky, 2005).

Alongside the process, measuring the 'speed and quality' is not as easy as it sounds. For instance, the level of livelihood recovery post-disaster may differ amongst community members. It depends heavily on perceptions, which are greatly influenced by gender, occupation, community-based organization, and their participation in such organizations (Minamoto, 2010). On the basis of comparative study of post-disaster reconstruction and mechanism in three different disasters in India, it was identified that success and failure depends on the mandate, scope, power, structure and nature of the organizations that take charge along the process (Shaw, 2013).

The speed of recovery is important to many businesses, people who have experienced great loss, and suffered from lack of psychological well-being; therefore, realistic timeframes and desired outcomes should be established and monitored for every recovery program and project (Schwab, 2014). Schwab (2014, p. 13) pointed out that timeline strategies can be used to parse problems and manage uncertainties, moving from broad goals to particular challenges, either in spatial or systematic forms. Ideally, the community wants to recover from the disaster and become more resilient with a sustainable place as a result of recovery programs (Schwab, 2014, p. 9).

2.2.2.2 Resilience for a Better Recovery

According to The National Academy of Science, 'resilience is the ability to prepare and plan for, absorb, recover from, and more successfully adapt to adverse events' (Schwab, 2014, p. 20). According to Godschalk (2009, as cited in Schwab, 2014, p. 25), opportunities to advance community resilience may arise during long-term recovery from a disaster that may not arise at any other time. It is not only fostered by government, but also by individuals, organizations and business communities. Furthermore, it involves technical, organizational, social and economic dimensions. Many researchers argued that it is the practice of everyday resilience in response to daily stress that best equips organizations to handle catastrophic and unexpected challenges (Schwab, 2014). Resilience allows a community to respond and recover effectively from specific events; therefore, it is important to embed the concept of resilience within the wider framework of sustainability (Schwab, 2014, p. 21).

Sustainability is a frame of reference that aims to preserve for future generations the resources and opportunities that exist for current generations (Desta, 1999; Lélé, 1991; Hopwood et al., 2005). The community can therefore plan in advance and take appropriate steps to mitigate hazards before the disaster.

Nevertheless, one should not solely focus on hazards. Since society changes over time, vulnerability to disaster may increase as well. In principle, vulnerability theory explains the unequal impact of disasters on people, and then identifies the cause based on, but not limited to, disproportionate power, economic conditions, political positions, or social privilege. The objectives of the vulnerability theorist are to focus our attention on human lives, especially those at highest risk and most vulnerable. In short, vulnerability theory proposes that 'the social distribution of risk is not shared equally across all groups' (Phillips, 2009, pp. 37-38). According to Wisner (2001, as cited in Phillips, 2009), vulnerability theory offers guidance for those involved in recovery management to decentralize their recovery efforts, involve the community in the decision making process, and integrate local knowledge for better outcomes. Increases in vulnerability might result from poverty, population changes, diversity, industrialization, and globalisation, as well as improper land use and construction (McEntire, David A., 2014, pp. 432-6):

(1) *Poverty*. A lack of resources will limit people's ability to live in safe houses and take precautionary actions before, during and after the disruptive event, e.g. limited choices for insurance.
(2) *Population Growth and Urbanization*. The more people are exposed to hazards, then the more vulnerability will increase. Furthermore, the increase in demand for water and food would likely increase the rate of drought and famine. If the number of infants, and disabled people and elderly people increases, then vulnerability will also increase, as they have insufficient capability to protect themselves during disaster.
(3) *Diversity*. The most obvious difficulty is that different ethnic groups speak different languages, which makes early warning processes more complicated. Language barriers also constrain the delivery of disaster relief and recovery assistance.
(4) *Industrialization*. The increased use of technology may also lead to a greater risk to nearby populations. Possible vulnerabilities are for people who live close to chemical and nuclear areas. Examples of these include chemical contamination from the Bhopal Disaster (1984) and nuclear fallout from Chernobyl (1986).

(5) *Globalization*. The shrinking of distance and disappearance of national borders that are beneficial to the facilitation of free trade and commerce are not without their drawbacks. Disaster, terror or human-made disaster in one part of the world may adversely affect those in other countries.

(6) *Land use and construction*. Vulnerability has also increased due to improper location and building construction. In fact, for some reason, the most hazardous land is also the most desirable real estate. In addition, construction also plays a role in disaster vulnerability: for example the design of the buildings may be flaw, or shortcuts may have been taken in the building process.

2.2.2.3 Disaster Recovery as an Opportunity for Development Agenda

Disaster is viewed as an 'interruption' to development, because what follows disaster is a period of uncertainty. Thus, the main concern in a disaster from the perspective of development is to quickly recover and reduce vulnerability as soon as possible, so that the focus can shift to basic and long term development (Anderson, 1985). A failure to bring development back on the right track may lead to a disparity between regions. In this case, the uneven development is not caused by the out-migration of resources to other regions, but by the disaster itself. In addition to this, pre-disaster conditions will influence the post-disaster conditions. As Olshansky (2005) argues, 'the negative trend that existed before the disaster will usually worsen during the recovery period. These include declining economies, social problems, and out-migration'. In line with this argument, Anderson (1985) argues poorer societies will experience higher levels of suffering after a crisis (whether that is a natural disaster or political crisis).

To some extent, economic activities should immediately start to operate, though this might be in temporary shelters with only the minimum of services. In addition to this, local businesses need to re-open in order to restore the local economy (Berke et al., 1993). The early signs of post-disaster recovery will provide essential information for the formulation of further comprehensive development plans. The post-disaster 'window of opportunity' is an excellent time to assess economic development strategies, target industries, and incentive programs in supporting community resilience and sustainability. Redevelopment planning undertaken after the disaster can provide input to the economic recovery goals that can either complement pre-disaster economic development strategies or create new goals (Schwab, 2014).

It is true that disaster recovery can be seen as a development opportunity; however, it needs to be linked to the local government system. Development opportunity comes after disaster, as significant financial, technical and human resources enter into the region, positively contributing to the development of the region in the long term. Nevertheless, the local government also should be involved since most activities need to reflect the local socio-economic and cultural contexts (Shaw, 2013). When discussing disaster and development, Anderson (1985) notes the important elements of 'suffering/loss' and 'coping ability'. In her view, disaster can be assumed to be an indicator of a failure of development; meanwhile, development also can be understood as an integrative process to reduce vulnerability to disaster. Moreover, development can be said to have failed if the communities have a low level capacity to cope with disaster, in which the suffering as well as the long-term loss cannot be minimized. Those who cope better are those who develop.

According to the Brundtland Commission (1987, as cited in Collins, 2009, p. 16), 'sustainable development is development that meets the needs of the present without compromising the needs of future generations'. Sustainable development has environmental, social and economic dimensions; conversely, unsustainable development increases the risk of disaster by propagating environmental degradation, social decay, economic collapse, and so on. The interconnection between poverty and environment is very clear, as Mike Davis (2006, as cited in Zeiderman, 2012) argues poor people are likely to be forced to live with disaster. This can be illustrated by the case of Bogota (Zeiderman, 2012) which showed that vulnerability had a long history, starting when migrants seeking economic opportunity were unable to buy housing, which caused people to construct rudimentary housing on steep slopes or hazardous parts of the flood plain. This phenomenon can also be seen in many other parts of the developing world.

Development may increase hazards and human vulnerability to disaster, but at the same time development also extends life expectancy and wellbeing as well as provides means of protection against disaster. Limitations have been more to do with uneven development and development that is not appropriately applied to different environmental, social, or economic contexts. Appropriate development can provide the means to avoid disasters, mitigate their impact or aid in sustainable recovery once one has occurred. As such, there is a need for both development and emergency oriented prevention and response (Collins, 2009, p. 28).

When the disaster strikes, long-term recovery can take years, but generally home-owners and businesses expect that recovery should happen much more quickly (Schwab, 2014, p. 26). Nevertheless, if the disaster affects the economic activities of key employers or major business entities, long-term hardship will emerge for the community (2009, as cited in Arendt and Alesch, 2015). The problems that might arise include permanent employer relocation, shutdowns, disruption to major supply chains, or other chain reactions, all of which cause major and possibly enduring disruption to local and regional economies. Thus, economic recovery is a complex policy area that is not easily developed through traditional government action. It requires participation from the private sector (Schwab, 2014, p. 84), as well as the community, as the community depends on its economy for survival, and the businesses depend on the community within which they exist. Arendt and Alesch (2015, p. 87) illustrate this as follows:

> *When we examined the consequences of extreme natural hazard events for small business two decades ago, we found numerous businesses in Northbridge that failed because of the Northbridge Earthquake without having experienced any physical damage from the event. The small business is more vulnerable than the larger business. Reasons for that were not only because the disaster has destroyed their business facilities, but also due to losing customers.*

In addition, Arendt and Alesch (2015) have argued that the government only provides disaster aid and insurance payments, and then with that aid, the community is expected to stimulate and revive the local economy on their own. However, in reality, it is not that simple, because 'the stimulus is too little and far too brief a time to yield long term, sustainable gains for the community's economy' (ibid., p. 88).

2.3 Network Theory for Development

2.3.1 Uneven Local Economic Development and Sustainable Development

2.3.1.1 Understanding Uneven Development

The problem of underdevelopment was first defined as a lack of surplus to invest in further growth. This problem was addressed by pioneers in development economics, including: W. A. Lewis, A. O. Hirschman, R. Nurkse, G. Myrdal, P. Streeten, R. Prebisch and H. W. Singer. Underdevelopment was seen as a 'trap' or 'vicious circle' from which a country had to break loose or, to use the aeronautic metaphor of W. W. Rostow, to 'take off' into self-sustained growth' (Hettne, 2009, p. 80).

In the 1960s, Rostow (1960, as cited in Anderson, 1985; Bingham and Mier, 1993) laid out a development approach through the lens of economic growth called the 'Stages of Economic Growth'. He focused on economics, and pointed out that sustained development will be shown by investment rates, growth rates and changes in Growth National Product. Another similar model was proposed by John Friedman (1966, 1967). However, Friedman and Rostow failed to address the issue of distribution of economic growth, and other social dimensions of development (See Box 2.1 Theory of Stage of Economic Growth). In addition, most economists have ignored certain things, such as the influence of culture, the importance of networks, the role of technological innovation and institutional dynamics.

All countries have adopted conventions for the calculation of gross national product (GNP), and gross domestic product (GDP) (the United Nations' Standard National Accounts). GNP and GDP per capita is the most common indicator of the level of development. 'Economic Growth' refers to an increase in either of these indicators. There are, however, well-known problems associated with this approach, such as: (1) the necessary data are often incomplete, unreliable, or not available; (2) informal jobs are excluded from national income statistics; (3) there is a large subsistence sector; (4) there is still a mixed up understanding of the difference between cost and income; (4) per capita income tells us nothing about distribution of income (Nixson, 2001, p. 14).

Box 2.1. Stages of Economic Growth Theory

Walt Rostow (1960) has categorized development into five stages: traditional, take-off precondition, take-off, maturity and mass consumption. The traditional stage of development is recognized by the limited availability of technology. The second stage is a condition whenever the region's economic and social structures begin to change. This may be because the leading regions invest in lagging regions, in terms of transportation, communication, etc. During this period, there is also a transfer of skills from leading regions to lagging regions. The third stage, take-off, happens when an external stimuli and investments increase. According to Rostow, the take-off stage lasts for 20-30 years. When the time comes, there will be a shift in the importance of the agricultural sectors vis a vis technology (e.g. communication, transportation, etc.). The last, mass consumption is characterized by the export of many goods and services which were formerly imported.

Source: Summarized from Anderson (1985), Bingham and Mier (1993), and MacKinnon and Cumbers (2011)

Significant problems arise when international comparisons of income level are made. Income data measured in national currencies have to be converted into a common currency, usually the US Dollar. If poor countries artificially maintain an overvalued exchange rate (i.e. their domestic currency is valued too low), this will overstate the

income of the country when expressed in US dollars. Nevertheless, many of the necessities of life in poor countries, basic foodstuffs for example, are very low-priced in dollar terms. For example, in contrast to Paris or London, a haircut in Kampala, Uganda, will cost less than one dollar. This means that the gap on average is not as great as these statistics would suggest. Indeed, a number of attempts have been made to compute more meaningful comparison (Nixson, 2001, pp. 14-15).

In order to overcome the problems associated with the use of existing exchange rates, attempts have been made to compare per capita incomes of different countries directly through the use of 'international prices'. The theory of purchasing power parity (PPP) holds that, in the long run, the exchange rate of two currencies should move towards a rate that would equalize the prices of an identical basket of goods and services in each country (Nixson, 2001, p. 15). '*Burgernomics*' is based on the theory of purchasing-power parity and the notion that one dollar should buy the same amount in all countries, called Big Mac index, '*We first launched this 14 years ago as a light-hearted guide as to whether currencies are at their 'correct' exchange rate. It is not intended as a precise predictor of exchange rates, but a tool to make economic theory more digestible*' (Nixson, 2001, p. 15). However, economic growth and economic development are not synonymous. GDP per capita might be rising, but at the same time poverty might be increasing, inequality in the distribution of income might be rising and massive environmental damage might be occurring. Economic growth might well be a necessary condition for economic development but it is not a sufficient condition. If economic growth does not lead to a reduction in poverty, inequality, and unemployment, then economic development cannot be said to be occurring (Nixson, 2001, pp. 12-13).

It was Myrdal (1957, as cited in Midgley, 2013, p. 25), who notably criticized the standard model of development, which mostly focuses on economic aspects. He argued that the growth economy policy should be accompanied by a social development policy to ensure that the economic growth is distributed fairly to the whole population. This should also be shown by the betterment of the standard of living for the majority of the population and/or decreasing rates of poverty. Accordingly, development should be followed by social improvement as well as an increase in equality. The social element[7] mainstreaming in development was also supported by Raymond A. Baur (1966) and the World Bank in the 1970s (under Robert McNamara's presidency). Their proposition

[7] They focused on the basic needs such as adequated food, clothes, houses, and other services like education and health services, etc. Other proponents of this school of thought also included political participation and social opportunities within their basic needs list.

is that the fulfilment of basic needs is expected to influence productivity, since it will result in increased output as well as an investment surplus.

Thus, another pivotal aspect is the social dimension, or as many scholars call it, social development. Social development is defined as 'a process of planning social change designed to promote the well-being of the population as a whole within the context of dynamic and multifaceted development process' (Midgley, 2013, p. 13). Development as a multifaceted process cannot be understood in isolation; the local dynamics, endogenous processes and informal processes of social change should be understood comprehensively (Olivier de Sardan, 2005, p. 24). According to Michael Todaro (as cited in Nixson, 2001, p. 13), there are three basic core values that should serve as a conceptual basis and practical guidelines for understanding the 'inner meaning' of development. These are:

(1) Sustenance: the ability to meet basic needs (food, health, shelter and protection);
(2) Self-esteem: a sense of worth and self-respect (implying dignity, honour and recognition);
(3) Freedom: an expanded range of choice for societies (including freedom from oppression, material wants, greater protection from environmental disaster).

Regional development will influence overall national development (Semitiel García, 2006). In this case, the regional development refers to change in regional productivity, which can be measured by population, employment, income and manufactured value added, as well as social development indicators such as quality of education and health services, environmental quality, equity and creativity (Bingham and Mier, 1993). There are two mainstream views in regional development theory: (1) development-from-above; and (2) development-from-below. The idea of development-from-above is that regional development will serve as a spurt process from the core and growth centres, which will then, trickle down to the periphery and hinterlands[8]. Development from this point of view is stimulated by exogenous forces: export, investment from outside, and migration. Meanwhile, development-from-below argues that the regions should be

[8] Bingham and Mier (1993, p. 28) have distinguished clearly between core and periphery, growth centre and hinterland and leading and lagging regions, as follows:

> *Core and periphery is to address regions on global scale...Growth centres are urban or extended metropolitan areas (urban fields), meanwhile hinterland are outside the urban fields. Thus within the both core and periphery regions, there will be growth centres surrounded by hinterlands. The leading and lagging concept is to distinguish the advance regions from underdeveloped regions at both the global and the regional levels. The periphery can be composed of growth poles that are leading regions while their hinterlands are lagging. The core can have hinterlands that are leading regions.*

actively in charge of their own development. Economic development will be sustained if the regions are able to continue producing goods and services to export, in addition to goods and service for local consumption. This requires capital and skilled labours. Trade, capital and labour thus become three types of external relationship that are crucial for regional development (Bingham and Mier, 1993). Appendix B outlines the mechanisms of regional development theories.

The most influential critique of the modernization paradigm was formulated by Andre Gunder Frank (1969). According to him, underdevelopment was not an original state, but rather a created condition: 'the development of underdevelopment'. In this theoretical perspective, the development of one unit could lead to the underdevelopment of another, depending on how the two units were structurally linked. Poverty was seen as a structure rather than as a particular stage (backwardness), as in the competing modernization paradigm. The conclusion drawn was that real development implied self-reliance and even delinking from the capitalist system. (Hettne, 2009, p. 82).

From the writer's point of view, the theory of regional development (see also Appendix B) does not implicitly suggest that in order to develop a region, one region should exploit another. In this case, one must see problems from another perspective: how to improve lagging regions. Thus, there should be better approaches in development.

2.3.1.2 Practical Views on Local Economic Development

Local economic development, according to the American Economic Development Council (AEDC), is defined as 'the process of creating wealth through the mobilization of human, financial, capital, physical and natural resources to generate marketable goods and services' (Bingham and Mier, 1993, p. vii). Furthermore, in terms of local economic development, a number of models have been introduced, namely (1) Community Development; (2) Affirmative Action; (3) Entrepreneurship. According to Szostak (2012, p. 183), community development involves dealing with processes 'to strengthen civil society (by strengthening links within the community and its interaction with sources of academic and professional advice), in order to prioritize the actions of social or economic or environmental policy'. Thus, it will empower the capacity of both individuals and community-level institutions.

Development can also be approached from the perspective of political economy and institutional economics (Woolcock and Narayan, 2000; MacKinnon and Cumbers,

2011), as follows: (1) the communitarian view; (2) the network view; (3) the institutional view; and (4) the synergy view.

Communitarian view

From the communitarian point of view, 'social capital is inherently good, that more is better, and that its presence always has positive effect on community welfare' (Woolcock and Narayan, 2000, p. 229). In this case, they hold on to the assumption that social capital is equal to numbers and density of groups, such as clubs, associations, and civic groups within the community. The central point in this view is to look at social relations in terms of reciprocity and helping behaviours. According to Minamoto (2010, p. 549):

> *Community-based organizations can be seen as representations of the local structure, and in recent years, various studies have focused on community-based organizations and regional networks as social capital with a role in fostering socioeconomic development in the developing world.*

However, the critique to this view lies on the unexpected side effect of 'bad culture' within groups, which may greatly hinder development. This may include gangs, drugs cartels and so on. Thus, we can say in this case that the cost of being a member outweighs the benefits. Another critique focuses on the assumption that members are homogenous and the claim that this automatically benefits members. From extant literatures, in fact, discrimination based on race, ethnicity, and gender are still issues facing community-based organizations up to now (Woolcock and Narayan, 2000).

Network view

The network perspective emphasizes the pivotal role of vertical and horizontal ties between people, as well as the broader context of connection among other entity groups. In relation to economic development, according to Granovetter (1995, as cited in Woolcock and Narayan, 2000, p. 232):

> *The economic development takes place through a mechanism that allows individuals to draw initially on the benefits of close community membership but also enables them to acquire the skills and resources to participate in networks that transcend their community, thereby progressively joining the economic mainstream.*

Thereby, from this point of view, the terminology of 'bonding' and 'bridging' in social capital can be recognised. However, although outcomes for social capital will depend on network configurations, the network view still believes that 'strong intra-community

ties give family and community a sense of identification and common purpose' (Woolcock and Narayan, 2000, p. 230). Moreover, the strength of this view is that they investigate social capital from both sides, i.e. in terms of both benefits and limitations. It therefore provides many valuable services for its community members, on the one hand, but increases the risk of non-economic claims (i.e. obligations and commitments), which may lead to 'negative economic consequences', on the other (Woolcock and Narayan, 2000).

Networks, along with the market and organizational hierarchy, are considered a way of organizing economic activity (Szostak, 2012). Therefore, network analysis is potentially a valuable addition to the study of economic growth. There are many influences that networks have on the economy, for instance in terms of investment, innovation, institutional change and entrepreneurship. Networks generate generally beneficial outcomes by encouraging trust and transmitting information.

The critique of this view mostly is focused around the idea of relativity, whose claims may lead to difficulties in drawing inferences for long-term policy-making or for wide areas (e.g. society or nations). In addition to this, the network view, to some extent, ignores the capabilities that communities have in shaping institutional performance, and conversely, how the institutional arrangement then influences the configuration of the network, as well as the interactive processes within the network.

Institutional view

The institutional view proposes that 'the vitality of community networks and civil society is largely the product of the political, legal and institutional environment' (Woolcock and Narayan, 2000, p. 234). Unlike the proponents of communitarian and network views, who treat social capital as an independent variable for targeted outcomes, the institutional perspective conversely views social capital as a dependent variable, since it is closely related to the quality of the embedded institutional aspects. From the institutional point of view, it is also underlined that firms themselves take into consideration bonding, credibility and competence, as well as external accountability to civil society. Also, according to this view, 'generalized trust', 'rule of law', 'civil liberties' and ' bureaucratic quality' contribute to economic growth.

On the other hand though, 'ethnic fragmentation' and 'weak political rights' have slowed economic development. In addition, the middle class consensus, bonding society as well as strong institutions, will contribute to the production of a stable and

positive impact in crisis situation. In short, the institutional view believes that 'investment in civic and government social capital are thus highly complementary to investment in more orthodox forms of capital accumulation' (Woolcock and Narayan, 2000, p. 235). However, because of the macroeconomic lens underpinning it, the institutional view lacks a microeconomic perspective. One criticism is that it barely touches upon the grassroots level. The betterment of the institutional aspect would take years to accomplish, while in the meantime people, as the most impacted party of poor development, need an immediate support.

All of the previous views leave a number of questions unanswered. To remedy this, many scholars have proposed a new view, one that integrated the previous three views and offers synergy between them (Woolcock and Narayan, 2000, p. 235).

Synergy view

Known as the synergy view, this perspective understands development as collaboration of all the previous views. As Uphoff (1992, as cited in Woolcock and Narayan, 2000, p. 238) concluded:

> *Paradoxical though it may seem, 'top-down' efforts are usually needed to introduce, sustain and institutionalize 'bottom-up' development. We are commonly constrained to think in 'either-or' terms – the more of one the less of the other – when both are needed on positive-sum way to achieve our purposes.*

Thus, the synergy view focuses on the nature of the community (e.g. norms, trust, reciprocity, etc.), networks and social relationships, interaction, as well as institutional context, since one surely influences the other, either direct or indirectly. To illustrate, the state, business entities and civil society can establish a forum to set priorities and build consensus on common goals in pursuit of development. In this context, social capital plays an important role as a 'mediating variable'. Thus, there are fundamental transformations that take place, from 'traditional kinship-based community life to societies organized by formal institutions' (Woolcock and Narayan, 2000, p. 238).

2.3.1.3 Sustainable Development

Most economists think that the environmental issue had become an obstacle to the achievement of economic growth and development agenda. Although the debate between economists and environmentalists started in the late 1960s (Desta, 1999, p. 11), sustainable development is not a new thing for the economists. More than two

centuries ago, Thomas Malthus (1766-1834), warned about resource scarcity resulting from population growth. According to Thomas Malthus in his famous book, 'An Essay on the Principle of Population' (1798), human populations grow exponentially, while food production grows at an arithmetic rate, therefore 'a population increase would exhaust existing resources' (Hettne, 2009, p. 50).

The Malthusian trap has become concern of for environmentalists, and a major issue in development theory up to now, as it has brought the notion of 'sustainability' into the development framework. In the late 1960s, the focus of the environmentalists was still how technological improvements could alleviate pollution. In the 1970s, the concept of sustainability became popular because of Neo-Malthusian views and because the idea of the relation between the environment and development had become more widely accepted. Then, in the late 1980s, the environmentalists began focusing on the scarcity of natural resources that resulted from continued economic growth[9]. Moreover, complex environmental threats were also recognized, such as deforestation, ecosystem damage, acid precipitation, ozone depletion, contaminated sites, air pollution, hazardous waste, and global warming (Desta, 1999, p. 12).

The term 'sustainable development' was first coined in 1980 by the World Conservation Union, United Nation Environmental Programme (UNEP), and Worldwide Fund for Nature. Following this, the United Nations General Assembly established the World Commission on Environment and Development, known as the Brundtland Commission (i.e. named after its chairperson, Mrs. Gro Harlem Brundtland) to formulate the notion of sustainability. According to the World Commission on Environment and Development, the fundamental idea of sustainable development is 'development that meets the needs of the present without compromising the ability of the future generations to meet their own needs' (Brundtland Report, 1987, as cited in Collins, 2009, p. 16). Thus a key element of this notion lies in its emphasis on 'maintaining interregional welfare over time' (Nixson, 2001, p. 13).

Sustainable development is a complex concept which involves multidimensional issues. The UNEP argues that sustainable development consists of ecological, economic and social basis factors which support the continuation of development itself. In addition, the sociocultural and political aspects will determine the social actors and institutions,

9 Clearer notions of the environment and a sense of the need to protect it grew following the European Nature Conservation Year in 1970, the United Nations Environmental Conference at Stockholm in 1972, and the report issued by the Club of Rome (The Limits to Growth) in 1972.

the governance and ownership of resources, as well as the stability of social and cultural systems. In a practical sense, the policy makers are expected to take into account the potential cost of environmental damage, and calculate the impact on long-term income improvement and the sustainability of well-being. In short, Desta (1999) argued that sustainable development was a precautionary action to ensure the long-term objectives of economic development, whilst maintaining the quality of the environment.

2.3.2 A Well Connected Community for Disaster Recovery

In the context of disasters, a conversation with a victim of a tsunami provides an example of how social capital provides a springboard from which to rebound from disaster. In spite of everyone's grief, there is always a hope that there are strong ties within the community.

> *In my mind I said: "Ya Allah, today I start my life from zero. Ya Allah, today I become alone again." And then suddenly in my mind again: "No. you are not alone. You are not starting from zero." And then I said: "Yes, I am not alone. I am not starting from zero." I said: "I have knowledge. I have friends that make me strong." But as strong as I was, I also cried. I cried anytime I go while calling the names of my children. I saw the dead bodies there. It was something like everything happened.*

Tabrani Yunis, Acehnese, Director of the local centre for Community Development and Education, as cited from Pelupessy et al. (2011, p. 19).

In comparison to a man-made disaster, a natural disaster indeed has some 'advantages'. In social capital theory, it is called ties or bond. Ride and Bretherton (2011) argued that the common perception among victims is the belief that natural disaster comes 'purely' from outside the human and from beyond respective local community habits, which has encouraged the ties between them and the need to deal with the crisis collectively. Community diversity, according to Johnston et al. (2012, p. 253), has also determined how community responds to recovery issues, and their ability to use resources and experiences to fulfil the needs and to plan future strategy.

In order to achieve a certain level of livelihood and local economic recovery, the idea of a bonding community which can help people cope with disaster can be used as a reference (Woolcock and Narayan, 2000, p. 226):

> *When people are on hard times, they know it is their friends and family who constitute the final safety net. Intuitively, then, the basic idea of social capital is that a person's family, friends, and*

> *associates constitute an important asset, one that can be called on in crisis, enjoyed for its own sake, and leveraged for material gain. What is true for individuals, moreover, also holds for groups.*

Thus, it is social bonding through networks and relations that play an important role in alleviating poverty and vulnerability (Anderson, 1985; Woolcock and Narayan, 2000). In addition, many studies, as cited in Woolcock and Narayan (2000), have connected being in poverty and exclusion from certain social networks and institutions that could be used to secure good jobs and decent housing. On the other hand, social ties can be both a 'blessing and blight', as many nations are still employing nepotism, which leads to discrimination, distortion and corruption.

According to Berke et al. (1993), recovery through the strengthening of community-based organizations indeed provides an opportunity to facilitate economic, social and physical development, but with the underlying assumption that communities are actively engaged in defining goals and directing redevelopment initiatives. A well-connected community is also recognized as crucial aspect in terms of aid distribution. For the purpose of effectiveness and sustainability, aid distribution post-disaster, either from government or non-government organisations, should involve a participatory process and community development (Anderson, 1985). Whenever the community is prepared and well-connected, then aid distribution processes will be distributed smoothly. In addition to community engagement, the 'power' embedded in a well-connected community cannot be ignored. From a study in the Caribbean and Midwestern United States, as quoted from Berke et al. (1993), it was found that groups particularly from the business communities benefited most from recovery aid. This was because of their relationship with the central authority and local institutions. They used their power to pressure authorities to provide certain advantages, including in choosing the business area to be rebuilt. Ironically, most of the aid programs are claimed to have a little connection to broader development agendas, and have tended towards short-term relief.

2.3.3 Collaborative Governance for Post Disaster Recovery toward Development

Collaborative networks are essential in disaster management and aim to tackle the structural problems associated with traditionally rigid, less open command and control response and recovery system. In this case, Kapucu (2014) defines collaborative governance as a collective effort of stakeholders when recovering from disasters. Furthermore, he explains that collaborative governance is being utilized and applied to

managing disaster due to the catastrophic effect of disasters that are beyond the scope of any single jurisdiction or sector.

Due to the limited research into disaster recovery topics (and in particular within a livelihood and local economy context, see Chapter 2, Section 6 below), the research that specifically links recovery network into regular development process is also sparse. However, to understand the similar process, it can be started with Woolcock and Narayan (2000, pp. 242-3), who tried to connect social capital approach to economic development policy. The network support in the recovery process toward the betterment of development policy can be based on the expansion and modification of their recommendation:

— *Network for Assessment.* To assess the (on-going process of) development, there is a need to look through a social perspective. For preliminary study, a social network can be the primary resources to investigate, for instance, the marginal groups in terms of economic risk and vulnerability.
— *Network for Institutional Analysis.* To map the relation among stakeholders, there is a need to conduct institutional analysis to identify the range of stakeholders and their interrelations. This is meant to understand how policy will affect the power and interest of the stakeholders at all levels and intersecting sectors of given problems to be addressed by policy. The dominant and marginal group should be identified in this sense to avoid producing biased policy.
— *Local government and Community based Organization Network*. There is a need to emphasize community organization capacity, especially in order to establish the connection between communities and other social groups. These organizations are meant to bridge the interests and available resources of different stakeholders, as well as to facilitate the consensus-building among stakeholders, as it is widely believed that an agreed goal is crucial for economic development.
— *Network for Accountability.* There is a need for accountability, which would be best achieved through information disclosure at all levels. Thus, the information and knowledge flowing through social relations and networks is also an essential aspect.
— *Network for Knowledge Exchange.* There is also a need for the betterment of physical access and communication technology for fostering the exchange process of knowledge and information across communities and social groups.

— *Network for a more integrated process.* Finally, in order to maintain its sustainability, the measures (e.g. social learning) should be incorporated firmly into the development process in a way that fosters the engagement of multi-level communities in the stages of the development process (i.e. design, implementation, management and evaluation).

Early on in the development of market economies, when markets are thin and incomplete, a thick network of interpersonal relations functions to resolve allocative and distributive questions. In particular, when the scale of the organization is relatively small, the system works reasonably well. Clearly, at least one important function of what we have come to call 'social capital' is to complement or substitute market-based exchange and allocation. Thus, Stiglitz (2000, p. 67) concluded that social capital is affected by, and affects, the development process. He urged the importance of the public's role in the enhancement of social capital, but who should undertake that public role, and how it should be done, are questions that need a great deal more thought.

However, investigations of social capital should be undertaken prudently. George (2008, as cited in Minamoto, 2010) began with a hypothesis that placed rural (i.e. agrarian village) and non-rural (i.e. tourist destination area) areas in a dichotomous relationship, and found that there were no significant differences in the level of social capital in both areas. He then investigated more deeply in follow-up focus groups, concluding that tourist areas in fact had their own type of 'social capital', which more or less functioned in a similar way to agrarian villages, and were able to encourage them (i.e. people within tourist areas) to participate in recovery processes.

2.4 Lacuna in Extant Knowledge

2.4.1 Overview of Previous Studies

2.4.1.1 Disaster Recovery Governance

Studies of disaster recovery governance are inter-disciplinary. The issue can thus be approached from many points of view. Below is an overview of previous studies on collaborative disaster recovery governance.

From a *psychological perspective*, Johnston et al. (2012) investigated the role of community engagement in reducing anxiety and trauma in communities following earthquakes in New Zealand between 1987 and 2003. The purpose was to compare the

effectiveness of different types of community engagement in facilitating the recovery process. The methods of data collection were semi-structured interviews with key informants (i.e. individuals and agencies), along with comprehensive analysis of relevant documents, such as reports, papers, and newspaper articles.

From this research, it was suggested that effective recovery is not solely dependent on individual abilities to cope with the impact of disaster, but in fact the community environment plays an important role in supporting the recovery process. Communities should be given the necessary information and allowed to participate. Community participation has empowered people to articulate, solve and take action in managing problems associated with anxiety and trauma. In addition, Johnston et al. (2012) highlighted the strong need to integrate the involvement of multi-agency communities due to various problems that should be addressed. They found that many agencies have shown a lack of cooperation prior to disaster. Later on, the limited interaction of multi-agency communities was identified as a major problem hindering the effectiveness of the recovery process. They also underlined the need to have clearly documented, shared and agreed upon planning guidelines. The planning process should be a collaborative effort, aided through regular communications, meetings, exercises and education, before, during and after the disaster.

Another study, involving an *institutional perspective,* came from Jahangiri et al. (2011). They conducted a comparative study of community based disaster management in selected countries in order to establish an institutional model for Iran. They compared six issues in disaster management: policy-making, planning, coordination, controlling and organizing as well as experience and access to information, by using a descriptive-comparative method. From this research, it was advised that community participation should be embedded in various stages of the disaster management cycle so that it will bring the process closer to the goals. Community participation means that people's contribution in the disaster management cycle can lead to institutionalization in the community (Jahangiri et al., 2011, p. 82). However, in the process, there is a tendency that participation will depend heavily on the specific characteristics of each nation.

Research on recovery governance can be also viewed *from the perspective of physical redevelopment*, i.e. rehabilitation and reconstruction. Lawther (2009) used the British Red Cross Maldives recovery program as a case study. This study is based on the writer's experiences and observation during his involvement in the housing and

infrastructure redevelopment program. Based on the lessons learnt, it was revealed that community involvement is essential to the overall success of the program. However, it was suggested that there should be a design for how to involve the beneficiaries and the community. The aim is to delineate a scale and context of involvement in the program so as to avoid any delay in the rehabilitation and reconstruction process. He highlighted the aspect of procurement models, methods of community involvement, and personal management capacity to facilitate community involvement within the program. In addition, he has also underlined the importance of institutional capacity building in driving community involvement within the program.

Livelihood and local economy can be approached *from social perspectives*. In this case, an overview of previous studies from social capital and networks point of view is offered. Research regarding livelihoods and recovery through the lens of social capital was conducted by Minamoto (2010). Minamoto tried to understand the relationship between people's perceptions of livelihood and micro-social capital in order to investigate effective disaster support at the community level. A household survey (i.e. 190 households; random) was undertaken. According to this study, social capital factors that represent the people's perceptions of livelihood recovery are networks, leadership, trust and community-based organizations. In addition to this, Minamoto found that participatory design in organizations was a negative factor in livelihood recovery, since it encouraged semi-forced participation. This research was designed to investigate the issue of effectiveness at the community level, but neglected to integrate it either with broader disaster management systems, or development issues, since the main focus was on effective assistance to the community level in terms of fair aid distribution.

2.4.1.2 Indonesia's Disaster Case Studies

In the wake of the tsunami in Aceh province and the earthquake on the western coast of Sumatera, Indonesia in 2004, many researchers tried to explore the lessons learnt and to contribute to the future handling of similar disasters. In the early years after the disaster, there were a number of scientific studies explaining how the phenomenon occurred and how emergency response, rehabilitation, reconstruction, and recovery planning was conducted.

Pelupessy et al. (2011) investigated community resilience in Aceh not only in the context of natural disasters, but also in relation to conflict issues. They conducted

interviews with survivors and volunteers who were active in the community response and/or NGO program. They used the interviews to construct a complete picture of the community response. The lack of knowledge of the tsunami threat was found to be one of the factors that led to the high death toll, because people ran and ran, but only a few knew to climb to higher ground. However, this was because there were no evacuation routes and standard protocols to respond to disasters such as this at the time.

Understanding of the social capital of trust, how to help other, self-reliance and well-connected religion-based community were the main contributions of this study, which used a qualitative approach drawn from psychology, development studies, peace studies and social approaches. In this study, the negative impact of people's relations was also revealed, and it was shown that aid distribution is distorted by the greed and laziness of some people within communities.

To sum up, they showed that the assumption that victims are helpless and rely heavily on the help of outsiders was not entirely acceptable. In fact, they concluded that cultural and social capital to some extent had contributed to community resilience, especially in the context of crisis: 'those who were active rather than waiting for assistance recovered from disaster better' (Pelupessy et al., 2011, p. 38).

Another study of the Aceh tsunami was conducted by Régnier et al. (2008). They investigated livelihood recovery, with a focus on economic rehabilitation through micro entrepreneurship activities. The activities were conducted in 2005-2007 and were expected to generate employment and income. The research was an evaluative-comparative study between Aceh in Indonesia and Tamil Nadu in India, and was based on the experience of European NGO projects in those two locations. It was found that conducting livelihood recovery is not an easy task, owing to chaos, uncertainty and low levels of trust. They argued that economic activities will succeed when conducted alongside the agencies that existed before the disaster. Another major finding was that there is a need to cooperate among the development agencies and NGOs to ensure not only a division of labour but also the sustainability of the activities themselves. In addition to this, it was also shown that compared to large scale reconstruction, microeconomic rehabilitation projects were limited in terms of aid and scope.

A similar study regarding livelihood was also undertaken by Thorburn (2009). The aim of this study was to investigate the effectiveness of international aid and support in Aceh's villages in terms of livelihood recovery. The indicators of recovery were

‘productive activities’ and ‘return to normal life’ and data focused on the early period of recovery and came from questionnaires (533 households), interviews (298 transcripts), focus group discussions (54 transcripts), histories (52 families), 35 case studies and 18 village profiles. From the study, it was found that basic needs were being met in all the villages. Households’ income had dropped, but after two and half years income had recovered to pre-disaster level.

A ten-year comparative study of social protection was also conducted through a case study of Indonesia and Thailand after the 2004 tsunami (Balgos and Dizon, 2015). The focus of the study was to investigate how people in those two areas rebuilt their lives and how they survived by examining the social protection programs and focussing on the livelihoods of affected communities. Balgos and Dizon (2015) argued that social protection is not only a means to aid survivors, but also reduces poverty, improves the lives of survivors and facilitates communities’ adaptation and mitigation to future disaster risks.

Another disaster study compared the Aceh case to the situation in Yogyakarta. The following quote provide an illustration of how the disaster management was conducted:

> *I like how they handle the disaster in Jogja. The sultan forbids the NGO to come there. The Sultan asked people to work together to rebuilt what is broken. So, the mutual assistance is still there.*
>
> *Dian, NGO, as cited in* Pelupessy et al. (2011)

In the case of Yogyakarta, the livelihood recovery investigation focused on a 2006 earth-quake. Resosudarmo et al. (2012) investigated the determinants of livelihood recovery in relation to the role of aid in the recovery process. The research was conducted using a survey of 500 small and micro enterprises in Bantul District and was undertaken 6 and 12 months after the earthquake. According to Resosudarmo et al. (2012), there were significant findings: smaller enterprises are more resilient and show a quick recovery process; the infrastructure condition is crucial; the speed of aid distribution is essential; it is important that industrial cluster system support is available. Other important findings were the fact that ‘affected firms are usually able to compete effectively with firms not affected by disaster’ (Resosudarmo et al., 2012, p. 255), as long as they used aid for the right targets. The aims of this study were related to aid, with the focus mainly on outputs instead of the underlying processes. In addition, another study in Yogyakarta was undertaken by Kusumasari and Alam

(2012a). However, the focus here was more on the role of local government capability in managing pre, during and post-natural disaster in Indonesia, and the Bantul local government was used as a case study.

2.4.2 The Gaps in Knowledge

The East Asia tsunami in December 2004 attracted the attention of the world to the potential threat of disaster to human lives and civilization. Many researchers have discussed various aspects of disaster, whether the discourse of physical reconstruction or social intervention, deriving underpinning theories or formulating practical implementation strategies. As an interdisciplinary research area, the study of disaster can be approached from many different perspectives. It can also be studied using in-depth case study, in the form of descriptive or prescriptive research.

The trend in previous studies has shifted from a physical approach to a social one. The latter approach has created a new paradigm and affected the overall disaster cycle system. Alexander (as cited in O'Brien et al., 2010) noted that despite the existence of six approaches to disaster (geographical, anthropological, sociological, developmental, medical and technical), only geographical and sociological approaches play a pivotal role in enriching existing knowledge of disaster. Although both disciplines share a common knowledge, geographical approaches focus on human and environmental factors, whereas sociological ones view disaster in terms of social disruption.

Humans should no longer be assumed to be objects or powerless victims. O'Brien et al. (2010) argued that a focus on humans is an essential entry point, as it might lead to a process of social learning. Humans in the collective can build a better preparedness system and community resilience, which result from a process of social learning. Since a collective of humans can also be understood as a community, community has become an essential issue in both sociological and geographical approaches.

Over the last decades, community-based approaches to disaster study have been widely applied and developed, especially when focusing on preparedness and mitigation, followed by study of recovery. Scrutinizing all the stages of the disaster management cycle, Sementelli (2007, p. 498) has pointed out that ‘much of the disaster literature tends to focus heavily on the tasks of response, planning and preparation’. Unfortunately, there is not much research that focuses on the recovery phase (Kapucu, 2014). Moreover, as Olshansky (2005) highlighted recovery is the least explored topic, and systematic comparative studies of recovery remains fewer. Berke et al. (1993) that

this means that recovery is the most poorly understood of all the different phases in disaster management. Based on the recent report 'A Global Outlook on Disaster Science' (Elsevier, 2017, p. 17), which contains analysis of recent scholarly output (i.e. 27,273 Scopus indexed papers), it was revealed that the recovery phase is the least explored topic in disaster studies (3,671 articles, or approximately 13.5 percent).

In the recovery phase, the level of community engagement also varied. However, due to the uncertainty characterising the post-disaster situation, wherein most of the government has less flexibility, the more people engaged in the community, the higher the probability of a successful recovery (Olshansky, 2005). Furthermore, Olshansky (2005)explained that community participation will contribute to successful recovery, such as helping to build multi-channel communication and to gain the community's support.

However, on this topic, Johnston et al. (2012) called for further research, arguing that there should be an investigation of the benefits of community meetings and whether or not community engagement contributes to effective recovery. In addition, according to Sementelli (2007), disaster study through the lens of economics is relatively rare. Many writers have focused on this process, but mostly avoid measuring the ultimate goal of the recovery, one of which is to revive livelihoods and the local economy (Olshansky, 2005; Olshansky et al., 2012). As Semitiel García (2006, p. 2) pointed out:

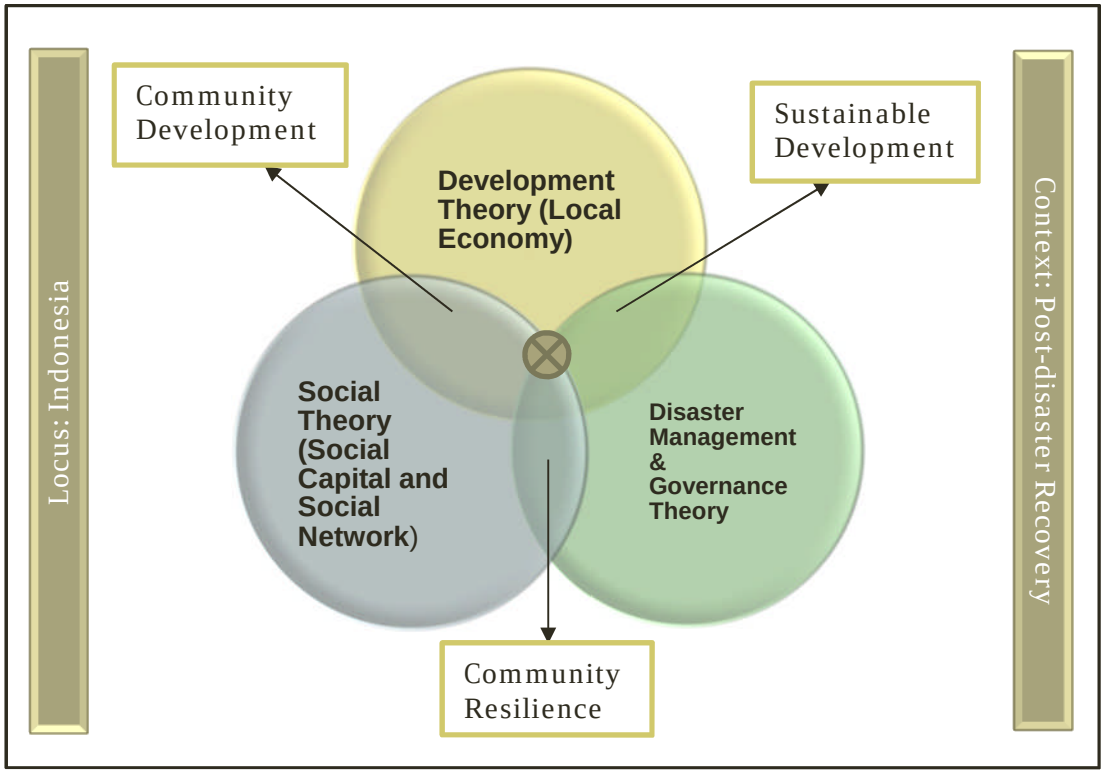
> *Traditional economic research generally considers nations instead of regions, average agents instead of differentiated actors, and their attributes instead of relationships. Moreover, usually only economic aspects are taken into account while the social, geographical and historical character of economic system and process are ignored.*

In addition to this, according to Semitiel García (2006, p. 2), 'the territory and specific locality' are noted as essential economic factors in development. The specific locality involves cultural and institutional conditions, and is expected to contribute to regional development. Since this factor is hard to reproduce in other regions, research on livelihood and economic revival after disasters requires the selection of regions instead of nations as the unit of analysis. As noted by Semitiel García (2006, p. 2), 'the social and relational character of economic actors should be considered according to the links both maintained among them, in a formal and informal sense, and being affected by the economic history and the location factor of their area'.

This research is thus interdisciplinary and seeks to approach the aims and research questions from three different perspectives: 1) disaster governance, especially in the context of the post-disaster recovery period; 2) development theory, especially from local economic perspectives; 3) social network theory, complemented by social capital theory. Figure 2.4 maps these various fields.

The area marked 'x' shown below is where the focus of this research lies. In addition, though, the idea of well-connected communities, from community development theory, will influence the collection, analysis and interpretation of data and results. Sustainability and resilience will also be discussed. However, this will be limited to the context of disaster recovery in Indonesia through a case study of Bantul District, Yogyakarta Province. To summarize, keywords that encapsulate the scope of the research are 'disaster recovery', 'local economy' (i.e. specifically small and medium enterprises), and 'social network'.

Figure 2.4. Focus of Research based on Mapping of Previous Study



Chapter 3. Overview of Case Study

3.1 Introduction

This chapter aims to provide sufficient background knowledge of the area of the case study, including an overview of Bantul Regency and the specific disaster that this thesis seeks to analyse, namely the 2006 Yogyakarta earthquake. This chapter also serves as introductory information before delving into greater detail in the empirical chapters (Chapter 5, 6, and 7). The reasoning for selecting the area will be explained further in the next chapter on Methodology (see Chapter 4).

3.2 Description of Case Study Area: Bantul Regency

3.2.1 Location

Geographically, Bantul Regency is located between 07°44'04" and 08°00'27" South latitude and 110°12'34 " and 110°31'08" East longitude. Bantul Regency is the most Southern area of the Province of Yogyakarta, with boundaries as follows (see Figure 3.1).

- North : Yogyakarta City and Sleman Regency
- South : Indian Ocean
- West : Kulonprogo Regency and Sleman Regency
- East : Gunungkidul Regency

According to the official government website (Bantul Regency, 2012a), Bantul Regency covers 15.9 percent of the Yogyakarta Province and consists of 17 sub-districts (i.e. *kecamatan*) and 75 villages, as shown in Table 3.1.

Figure 3.1. Administrative Area of Bantul Regency

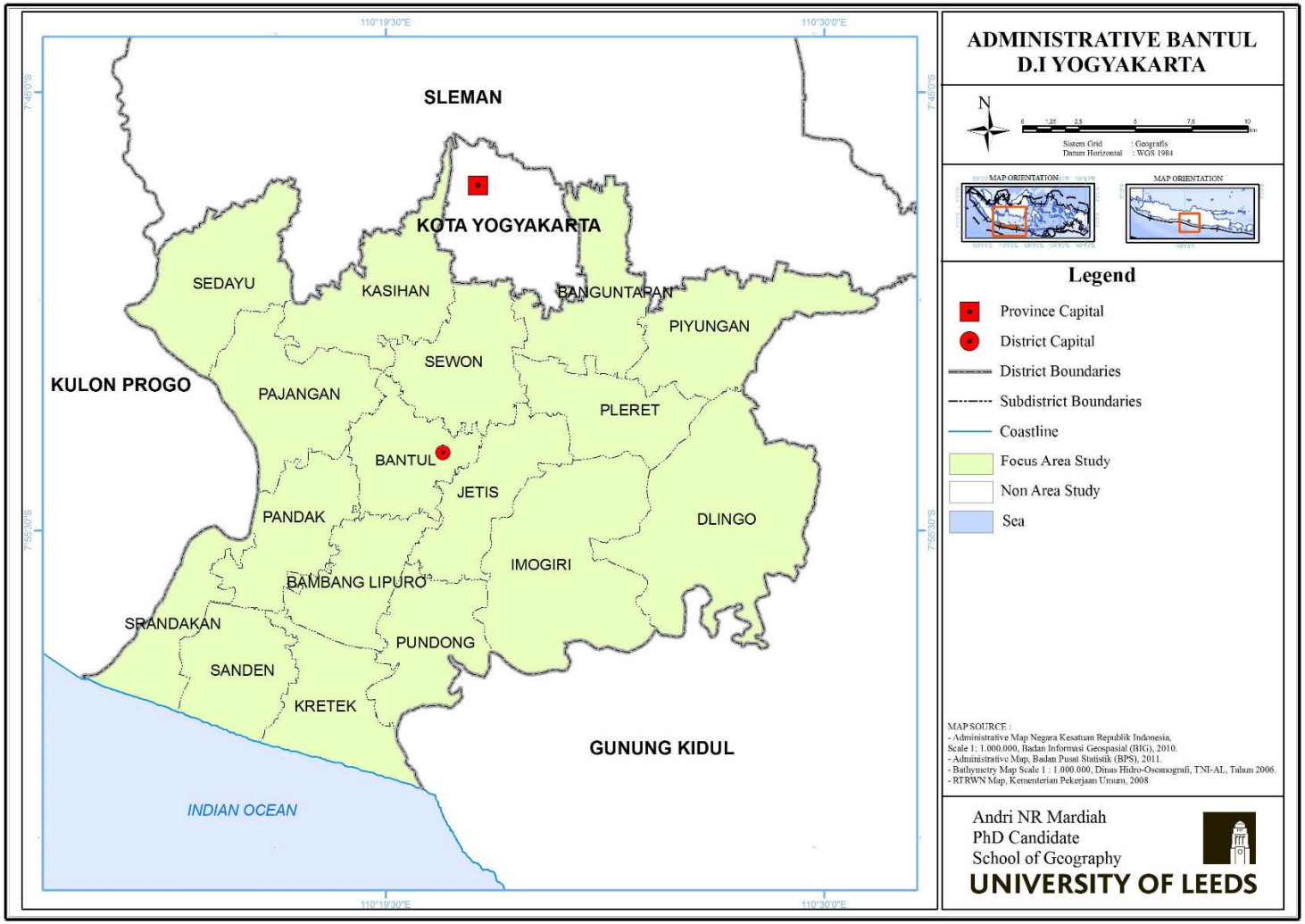


Table 3.1. The number of sub-districts and villages in the area of Bantul Regency

No.	Sub-district	Urban Type Villages	Rural Type Villages	Area	
				Km²	%
1	Srandakan	Poncosari (24 Dusun)	Trimurti (19 Dusun)	18.32	3.63
2	Sanden	Sri Gading (20 Dusun)	Gadingsari (18 Dusun) Gadingharjo (6 Dusun) Murtigading (18 Dusun)	23.16	4.59
3	Kretek	Tirtohargo (6 Dusun) Parangtritis (11 Dusun) Tirtosari (7 Dusun) Tirtomulyo (15 Dusun)	Donotirto (13 Dusun)	26.77	5.29
4	Pundong	Seloharjo (16 Dusun) Panjang Rejo (16 Dusun)	Srihardono (17 Dusun)	24.30	4.82
5	Bambanglipuro	Sumber Mulyo (16 Dusun)	Sidomulyo (15 Dusun) Mulyodadi (14 Dusun)	22.70	4.50
6	Pandak	Caturharjo (14 Dusun) Triharjo (10 Dusun) Gilangharjo (15 Dusun)	Wijirejo (10 Dusun)	24.30	4.82
7	Pajangan	Guwosari (15 Dusun)	Triwidadi (22 Dusun) Sendangsari (18 Dusun)	33.25	6.59
8	Bantul	Sabdodadi (5 Dusun)	Palbapang (10 Dusun) Ringinharjo (6 Dusun) Bantul (12 Dusun) Trirenggo (17 Dusun)	21.95	4.35
9	Jetis	Patalan (20 Dusun) Canden (15 Dusun)	Trimulyo (12 Dusun) Sumber Agung (17 Dusun)	21.47	4.26
10	Imogiri	Selopamioro (18 Dusun) Sriharjo (13 Dusun) Karangtengah (6 Dusun)	Kebonagung (5 Dusun) Karangtalun (5 Dusun) Imogiri (4 Dusun) Wukirsari (16 Dusun) Girirejo (5 Dusun)	54.49	10.80
11	Dlingo	Mangunan (6 Dusun) Muntuk (11 Dusun) Temuwuh (12 Dusun) Jatimulyo (10 Dusun) Terong (9 Dusun)	Dlingo (10 Dusun)	55.87	11.07
12	Banguntapan	Tamanan (9 Dusun) Jagalan (2 Dusun) Singosaren (5 Dusun) Wirokerten (8 Dusun) Jambidan (7 Dusun) Potorono (9 Dusun)	Baturetno (8 Dusun) Banguntapan 11 Dusun)	28.48	5.64
13	Pleret	Bawuran (7 Dusun) Wonolelo (8 Dusun) Segoroyoso (9 Dusun)	Wonokromo (12 Dusun) Pleret (11 Dusun)	22.97	4.55
14	Piyungan	Sitimulyo (21 Dusun)	Srimulyo (22 Dusun) Srimartani (17 Dusun)	32.54	6.45
15	Sewon	Pendowoharjo (16 Dusun) Timbulharjo (16 Dusun)	Bangunharjo (17 Dusun) Panggungharjo (14 Dusun)	27.16	5.38
16	Kasihan	Tamantirto (10 Dusun) Ngestiharjo (12 Dusun) Bangunjiwo (19 Dusun)	Tirtonirmolo (12 Dusun)	32.38	6.42
17	Sedayu	Argodadi (14 Dusun) Argomulyo (14 Dusun)	Argosari (13 Dusun) Argorejo (13 Dusun)	34.36	6.81
	Bantul Regency	41 Villages	34 Villages	504.47	100.00

Source: Bantul Regency (2012a)

3.2.2 Population Density and Distribution

Like most other regions, population growth in Bantul Regency is influenced by natural growth (i.e. birth and death) and migration (i.e. outmigration and inward migration). There were no significant increases in the population between 2011 and 2012. However, a substantial increase occurred in the Sub-district of Banguntapan, counting up to 2,328 people in one year. As a result, the population density in Banguntapan Sub-district became the highest, measuring up to 4,383 people per km^2, and thus constituting an increase of 83 points from the previous year. In contrast, the population rates of the Sub-districts Srandakan, Santen, Kretek and Pundong were not showing any significant changes, and therefore the average population density within these sub-districts remained the same. The total population and its respective density in the various sub-districts of Bantul Regency between 2011 and 2012 can be seen in Table 3.2.

Inevitably, uncontrolled population growth will lead to a population explosion. With around 930,000 people residing in an area of only 506.85 km^2 (update from the BPS of Bantul Regency, 2014), local governments face various challenges especially in terms of budget constraints, and the allocation and distribution of resources among different communities with diverse needs. In addition, local governments need to find local solutions to address pressing issues, such as waste or garbage disposal, access to clean water, the impacts of climate change, and the continuous threat posed by disasters. In future, the uncontrollable population explosion is also likely to impact the vulnerability and the ecological capacity of Bantul Regency area.

Table 3.2. Population and Density of Bantul Regency between 2011 and 2012

No	Sub-district	Area (Km^2)	2011		2012	
			Total Population (people)	Density (people/ Km^2)	Total Population (people)	Density (people/ Km^2)
1	Srandakan	18.32	28,668	1,565	28,755	1,570
2	Sanden	23.16	29,744	1,284	29,814	1,287
3	Kretek	26.77	29,323	1095	29,470	1,101
4	Pundong	23.68	31,779	1,342	31,881	1,346
5	Bambanglipuro	22.70	37,480	1,651	37,617	1,657
6	Pandak	24.30	47,908	1,972	48,104	1,980

No	Sub-district	Area (Km²)	2011		2012	
			Total Population (people)	Density (people/ Km²)	Total Population (people)	Density (people/ Km²)
7	Bantul	21.95	59,754	2,722	60,192	2,742
8	Jetis	24.47	52,313	2,138	52,667	2,152
9	Imogiri	54.49	56,536	1,038	56,823	1,043
10	Dlingo	55.87	35,667	638	35,817	641
11	Pleret	22.97	43,731	1,904	44,155	1,922
12	Piyungan	32.54	49,427	1,519	50,137	1,541
13	Banguntapan	28.48	122,510	4,302	124,838	4,383
14	Sewon	27.16	105,701	3,892	106,929	3,937
15	Kasihan	32.38	112,708	3,481	114,412	3,533
16	Pajangan	33.25	33,216	999	33,549	1,009
17	Sedayu	34.36	44,798	1,304	45,116	1,313
	Bantul Regency	506.85	921,263	1,818	930,276	1,835

Source: BPS of Bantul Regency (2014)

3.2.3 Livelihood and Local Economy

In 2012, the structure of the economy in Bantul Regency was dominated by four sectors, namely agriculture (25.56 percent), industry and manufacturing (18.9 percent), trade, hotels and restaurants (21.16 percent), as well as the service sector (16.89 percent). The agricultural contribution in the local economy of Bantul Regency comes from food crops varieties. Furthermore, the dynamics of development in Bantul Regency have given rise to structural transformations in the economy, which has seen a shift from reliance on the primary sector to the secondary and then to the tertiary sector. The contribution of the primary sector is made by agriculture, mining and extraction, all of which continue to decline year by year. This is due to the increasing conversion of the agricultural land, and at the same time the strengthening of the small and medium industry sector (MSMEs). The added value and investment from MSMEs annually is around 500 billion rupiah (Bantul Regency, 2013).

Table 3.3 illustrates the population of Bantul Regency according to livelihood sectors. The population figures represent the total persons aged 10 years and over who are in employment.

Table 3.3. Population of Bantul Regency according to Livelihood Sectors in 2011

No.	Livelihood Sectors	%	Total Population
1	Agriculture	25.56	235,475
2	Mining and Extraction	1.98	18,241
3	Manufacturing and Industry	18.95	174,579
4	Electricity, Gas and Water	0.07	645
5	Construction	8.88	81,808
6	Trading	21.16	194,939
7	Communication and Transportation	4.64	42,747
8	Finance	1.61	14,832
9	Services	16.89	155,601
10	Others	0.26	2,395
	Bantul Regency	100	921,263

Source: Bantul Regency (2012b)

With the handicraft industry evenly distributed across almost all the areas of Bantul, its impacts, such as job opportunities and income generation, are widely felt in the Bantul people's lives. In 2005, the productivity of MSMEs reached a value of 439.59 billion rupiah (BPS Bantul Regency, 2011). A village's craftsmen usually hand down their expertise and knowledge from generation to generation. Importantly, the villagers' craft production centres shape not only the industrial and trade sectors, but also the tourism sector.

As regards the employment rate in the small industry sector, for example before disaster struck in 2005, the Kasihan sub-district recorded over 1,500 villagers (becoming 2,367 in 2009) working in centres that crafted furniture and bamboo handicrafts. This noticeable highest employment rate within the small industry sector is contributed from the cluster of furniture crafts in the village of Tirtomolo and bamboo handicrafts in Bangunjiwo village. In addition to furniture and bamboo products, Kasihan was also famous as a cluster of ceramics and pottery, which later on also serves as a tourist destination in Bantul. Table 3.4 below shows the profiles of some of the handicraft clusters in Bantul.

Table 3.4. Profile of Some of the Handicraft Clusters in Bantul

No.	Cluster	Units	Workforce (people)	Total Production (pcs/year)	Value of Production (rupiah)
1	Pottery in Kasongan – Bangunjiwo, Sub-district of Kasihan	441	2,367	1,400,000	8,053,890,000
2	Leather-based Handicraft in Manding – Sabdodadi, Sub-district of Bantul	55	265	55,250	7,855,550,000
3	Furniture in Bawuran, Sub-district of Pleret, Srimartani-Srimulyo, Sub-district of Piyungan, Panggungharjo, Sub-district of Sewon, and Sumbermulyo, Sub-district of Bambanglipuro	147	767	6,475	6,267,300,000
4	Wood craft in Krebet – Sendangsari, Sub-district of Pajangan	35	220	29,000	435,000,000

Source: Bantul Regency (2009b)

3.2.4 Topography

Topographically, most of the area in Bantul Regency is terrain (a slope of below 2 percent), covering 61.99 percent of the total area. Meanwhile, the steep area (a slope of between 25 and 40 percent) and very steep area (a slope of more than 40 percent) cover the remaining 8.41 percent and 7.91 percent of Bantul's total area, respectively. The distribution of the terrain area starts from the middle of the South coast, and then extends to the North including the Sub-districts of Sanden, Kretek, Srandakan, Pundong, Pandak, Bantul, Jetis, Sewon, Kasihan, and Banguntapan, as well as parts of the Sub-districts of Imogiri, Pleret, Piyungan and Sedayu. The steep and very steep slope areas are located in the Eastern parts of Bantul Regency, specifically in the Sub-districts of Kretek, Pundong, Pleret, Piyungan, Dlingo, and most of the Imogiri Sub-district. Table 3.5 illustrates the distribution of the slope grade in the Bantul area, based on data obtained by the Land Agency, which can be accessed on the official website of Bantul Regency.

Based on the classification of slope, the physiographical elements of Bantul Regency can be grouped as follows:

— The Western part is made up of sloping and undulating areas. The soil fertility of these areas is suitable for cultivating wetland food crops;

— The regency's middle section is typically marked by plain and sloping areas, which stretch from the South to the North. The high soil fertility of these areas is ideal for the cultivation of wetland food crops.
— The Eastern part is characterised by hilly areas that extend from the South to the North. These areas have low soil fertility, with the implication that only some types of plants are able to survive, and has only limited uses for food crops from rain-fed agriculture.
— The Southern part is made up of coastal areas, and is actually a part of the middle section regency. Here, there are a lot of sandy areas, particularly on the South coast of the sub-districts of Srandakan, Sanden and Kretek. With intensive irrigation, these areas can be cultivated with agricultural crops (i.e. *palawija*) and perennial crops.

Table 3.5. Area of Bantul Regency according to the Class of Slope

No.	Class of Slope (%)	Area	
		Km²	%
1	0-2	314.21	61.99
2	2-8	58.98	11.64
3	8-15	28.00	5.52
3	15-25	22.93	4.52
4	25-40	42.64	8.41
5	> 40	40.09	791
Bantul Regency		506.85	100.00

Source: Bantul Regency (2009a)

3.2.5 Climatology and Hydrology

In general, Bantul Regency has a low level of rainfall[10], and experiences about five to six months of wet weather and two to four months of dry conditions. A wet weather period is defined as months with rainfall of at least 200 mm, while a dry period involves months with rainfall of less than 100 mm. In order to cultivate crops, such as *palawija*, rainfall of at least 100 mm is required. During dry spells without any rainfall (of maximum two months), the moisture of the soil is still considered adequate.

In the regency of Bantul, there are three main watersheds: the Progo watershed, Opak watershed, and Oya watershed. These watersheds have permanent streams, which flow throughout the year. Nevertheless, during the dry season, some smaller rivers discharge a relatively small water flow. These rivers are perennial streams with thick

[10] Climate in Bantul around Bantul Regency from year of 1998 to 2008. Regency is recorded according to Oldeman's Method (i.e. agro-climatic classification) from observation stations.

aquifers, with the base flow relatively high and effluent. The Opak River tips at Mount Merapi, then flows towards the South through Sleman Regency, the City of Yogyakarta, and Bantul Regency, and then further towards the Indian Ocean. The Opak watershed has an estimated area of 1,350 km^2 and an approximate length of 70 km. One of the main tributaries of the River Opak is the Oya River, which has an area of around 750 km^2 and a length of 112 km.

According to research published by the Faculty of Engineering at the University of Gadjah Mada, the geological profiles of drilled wells in the Regency of Bantul are generally located at the formation of free aquifers and half-depressed aquifers. The thickness of the aquifer formation in the urban areas of Bantul Regency surpasses 100 metres. Bantul Regency is part of the Merapi Aquifer System (SAM), comprising a multi-layered aquifer with relatively similar hydraulic characteristics, which are related to one another. Around the Bantul city area, the thickness of SAM is documented to measure around 125 meters.

Underground water within the Bantul area flows from North to South with a graded slope, as the hydraulics gets smaller. The morphology of this underground water resembles a cone, spreading radially. Indeed, this is the common characteristic of underground water within volcanic areas since the recharge area is derived from the slopes of Mount Merapi. Bantul Regency has experienced a decrease in the topographic gradient, which is accompanied by a decline in the hydraulic gradient and the value of the aquifer's characteristics. As a result, the groundwater flow velocity has decreased.

3.2.6 Disaster Hazards History

Bantul Regency is marked by a high disaster risk zone, given its numerous areas prone to flooding, landslides, earthquakes, tsunamis, and droughts. The earthquake that occurred on 27 May 2006 devastated most of the sub-districts in Bantul Regency. The tsunami following the earthquake of 2006 occurred in the Southern coastal region of Bantul Regency, which includes the Sub-districts of Kretek, Sanden, and Srandakan. In addition, incidences of drought affect Bantul Regency almost every year, particularly in the Sub-districts of Dlingo, Piyungan, Displays, Pleret, Imogiri, and Pundong. Table 3.6 below shows the disaster-prone locations in Bantul Regency according to their disaster-risk potential.

Table 3.6. Disaster-prone areas in Bantul Regency

No	Disaster Risk Potency	Disaster prone locations
1	Earthquake	All sub-districts
2	Landslides	Sub-districts of Imogiri, Dlingo, Pleret, Piyungan and Pundong.
3	Flooding	Sub-districts of Kretek, Srandakan, Sanden, Pandak, Jetis, Pundong, and Pleret.
4	Tidal-wave and/or Tsunami	Sub-districts of Kretek, Srandakan, Sanden, and parts of Sub-districts of Pandak, Pundong, Imogiri, Jetis, and Bambanglipuro.
5	Drought	Sub-district of Dlingo, and parts of Sub-districts of Piyungan, Pajangan, Pleret, Imogiri, Pundong, Sedayu, Kasihan, and Kretek.

Source: Bappeda of Bantul Regency, 2013

Bantul Regency is classified as a disaster-prone area, and as high risk in terms of earthquake potential. The occurrence of an earthquake on 27 May 2006 has highlighted the magnitude of this risk. This major earthquake had a disastrous impact, resulting in more than 5,700 deaths, 37,000 people being injured, and more than 200,000 displaced and made homeless. In addition, there was considerable damage to the existing facilities, affecting the housing, social system, infrastructure and other productive sectors. The total loss and damage suffered as a result of this disaster in both the Yogyakarta and Central Java Provinces is estimated to have reached 29.1 trillion rupiah (the 2006 Yogyakarta earthquake will be explained further in Section 3).

Besides earthquakes, Bantul Regency is also vulnerable to tsunamis. On 17 July 2006, the Pangandaran tsunami occurred. The Indonesian Agency for Meteorology, Climatology and Geophysics (BMKG) announced that an earthquake on the ocean floor, reaching a magnitude of 7.1 SR, triggered the tsunami, which was located 293 km Southwest of Cilacap. The height of the tsunami wave was observed in the Southern coastal area of Bantul Regency, reaching 1-3.4 meters. Although fortunately the natural phenomenon failed to impact on lives and properties in the Bantul area, it nevertheless affirmed that the Southern coastal area of Bantul Regency faces a multi-hazard threat from earthquakes and tsunamis. Based on the records of the Disaster Management Agency of Bantul Regency (BPBD of Bantul Regency), in addition to earthquake and tsunami, there were additional types of disasters that have occurred in Bantul, including:

1. *Flooding*

In Bantul Regency, flooding occurs not only due to high rainfall, but also as a result of accumulated water that flows from the Northern City of Yogyakarta and the Northern part of Bantul Regency, where the sub-districts of Kasihan, Sewon, and Banguntapan are located. In May 2011, for example, heavy rainfall resulted in the overflowing of the Code River. Consequently, several houses in Dusun Sorogenen and Timbulharjo were submerged. Subsequently, in January 2012, following the Winongo River's flooding, BPBD of Bantul Regency recorded around 70 residents that were displaced, 15 of whom had to be evacuated by rescue teams. Refugees were scattered in several locations, such as Dusun Jogonalan Kidul, Dusun Jogonalan Lor, Dusun Glondong Dua, and most of them lived near riverbanks. The flooding also ravaged Dusun Pandeyan, Bangunharjo, and Sewon. The total damage and losses in Bantul reached 29 billion rupiah. In 2013, floods that followed heavy rainfall submerged more than 200 Ha of agricultural land in Bantul Regency. The flooded agricultural land was located in the Sub-districts of Pundong, Bambanglipuro, Pandak, Kretek, and Sanden. Similar to the flooding in 2011, this flooding occurred as a result of heavy rainfall and the accumulation of stagnant water due to poor drainage.

2. *Cyclone*

In 2011, a cyclone struck the sub-district of Piyungan and resulted in 54 houses being damaged. Most of the damage occurred in Dusun Sitimulyo, causing some wreckage to 35 houses. The total damage caused by this cyclone was documented to be around 28 million rupiah. In addition, in 2013, dozens of trees felled by the hurricane caused various degrees of destruction to the Sub-district of Jetis. The fallen trees hit several houses, which fortunately only resulted in one person being injured. Apart from the Sub-district Jetis, the Sub-districts of Imogiri and Sewon also had to deal with the damages caused by fallen trees.

3. *Tidal Wave*

In 2011, a tidal wave hit the beach of Kuwaru in the sub-district of Srandakan. This tidal wave damaged plants, dozens of buildings, and even the asphalt road along the shore of Kuwaru. It occurred as a result of natural factors that are typical for this region. In addition, in 2013, a tidal wave and abrasion caused damage to Samas Beach in the sub-district of Sanden, and resulted in all families living within 200 meters from the edge of the sea being evacuated. The incident destroyed six houses, 12 of which had been abandoned due to the evacuation efforts.

4. *Drought*

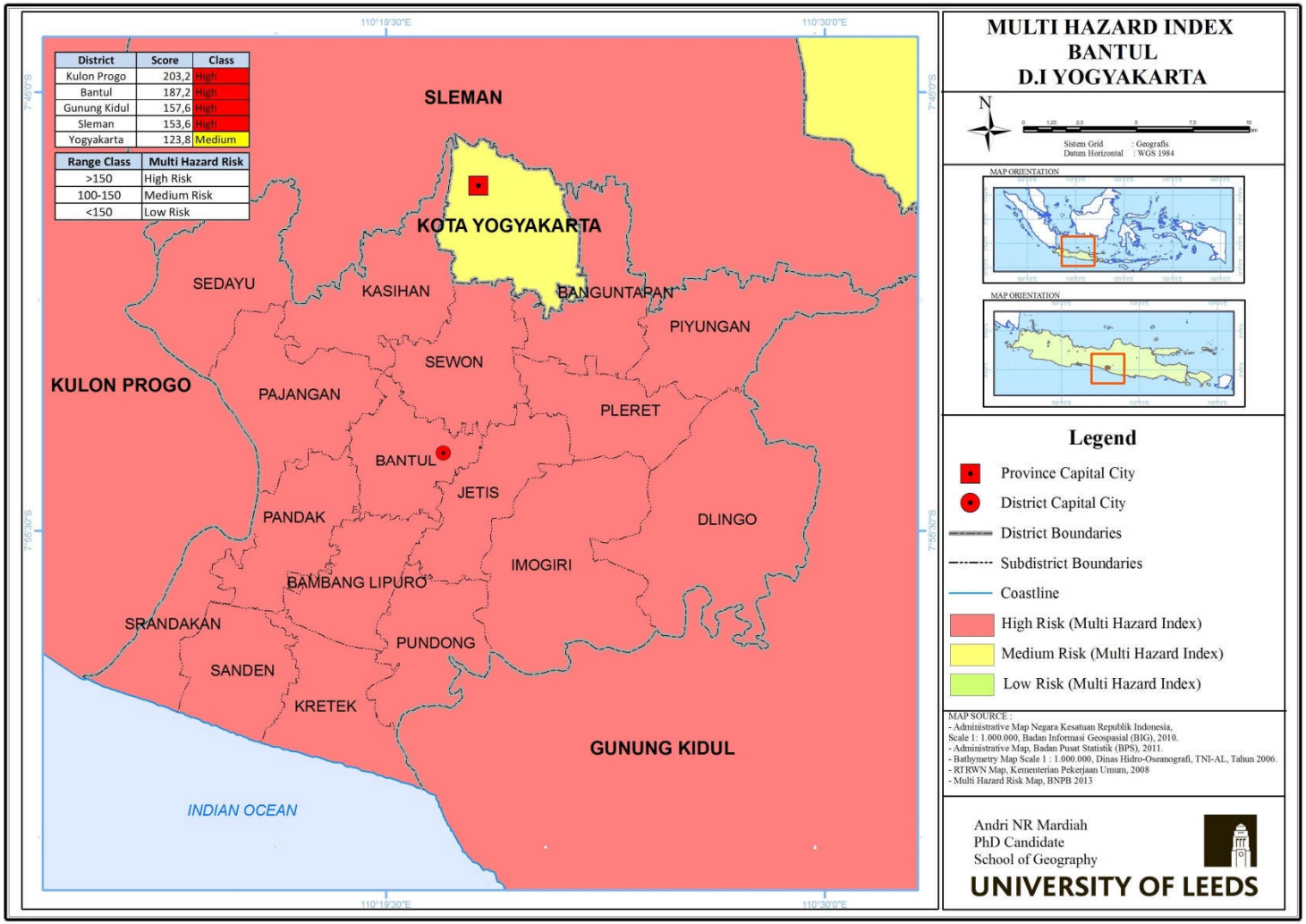
In 2011, droughts plagued 95 Ha of wetland in the Sub-districts Sedayu and Piyungan, resulting in crop failures. The long period of drought caused the irrigation water supply to diminish. Moreover, in 2012, the impacts of the drought were also felt in several other areas within the regency, including the sub-districts of Dlingo, Imogiri, Pleret, Kretek and Pajangan.

5. *Landslides*

In 2012, heavy rainfalls caused severe landslides in Dusun Mojosari, a Sub-district in Piyungan. It resulted in one house being damaged and several other houses being left at risk of further landslides. In 2013, another landslide occurred in Dusun Sriharjo, in the Sub-district of Imogiri, destroying two houses and displacing 11 families. Most landslides in the regency area were preceded by heavy rainfall.

In connection with the explanation above, the Government of Indonesia through BNPB has prepared a multi-hazard risk index in all regions in Indonesia, and especially for the Bantul area as shown in Figure 3.2. Multi Hazard Risk Index.

Figure 3.2. Multi Hazard Risk Index



District	Score	Class
Kulon Progo	203,2	High
Bantul	187,2	High
Gunung Kidul	157,6	High
Sleman	153,6	High
Yogyakarta	123,8	Medium

Range Class	Multi Hazard Risk
>150	High Risk
100-150	Medium Risk
<150	Low Risk

3.1 An Overview of Disaster Case: The 2006 Yogyakarta Earthquake

According to the National Disaster Management Agency (BNPB) in Bantul Regency, a number of earthquakes were recorded, but those occurring in 1867, 1943 and 2006 caused the most devastating impacts. On 27 May 2006 at 5.54 a.m. local time, a medium-sized earthquake hit the Yogyakarta and Central Java Province. At the first shake, the earthquake measured 6.2 on the Richter scale, while other sources claimed it was 5.9 (Bantul Regency, 2008).

After a series of shakings, each of which lasted about 57-60 seconds, the greatest intensity was recorded at 5.2 (Elnashai et al., 2006). The epicentre was estimated to be about 30-35 km South of Bantul Regency in Yogyakarta Province. According to the Indonesian Agency for Meteorology, Climatology and Geophysics (BMKG), this was located at 8.03 Southern latitude and 110.32 Eastern longitudes. The site experiencing the most intense shaking was estimated to reach a radius of about 200 km^2.

According to the National Development Planning Agency's (BAPPENAS) early rapid assessment, more than 5,700 people were killed, while the numbers of those injured exceeded 37,000. The areas worst affected included Bantul Regency, Yogyakarta Province (4,121 people killed) and Klaten Regency, Central Java Province (1,057 people killed). About 200,000 people were displaced, and the majority were classified as homeless following the severe damage caused to many houses. It was noted that about 150,000 houses were completely destroyed, and 202,032 partly damaged, while numerous essential public facilities were severely damaged. A large number of hospitals and schools were wrecked, and the people also experienced hardship getting clean water. Additionally, several towers (i.e. for power distribution), roads and bridges urgently needed to be restored. Moreover, airport runways suffered cracks, and terminal buildings partially collapsed. Fortunately, historical sites, such as Prambanan Temple, suffered only minor damages, whereas Borobudur was reported to be intact. To get an illustration of the damage caused by this earthquake, the details can be seen in the Figure 3.3.

In terms of the economic impact, the agriculture sector, trade and tourism suffered greatly, considering that Yogyakarta is a heavily populated, urbanized area with many cultural and historical sites. As a result, at least 70,000 people permanently lost their sources of income. Initial assessments revealed that the private sector suffered huge asset losses of 90 percent, such as houses, buildings, vehicles and equipment, while the

public sector lost only 10 percent. Total economic losses were estimated to approximately come to a staggering $3 billion[11], not to mention the potential reduction of projected growth of the local economy from 5 percent to 1.3 percent in 2006 (Elnashai et al., 2006).

Figure 3.3. Damage to Housings and other Infrastructures

A. Housings

B. Residential Area

C. Roads

D. Agricultural Irrigation

E. Governmental Buildings

F. Tourist Site

Source: Goverment of Indonesia (2006) and Elnashai et al. (2006)

The emergency response was supported by two battalions of the Indonesian military, teams of medical staff and paramedics, and Hercules transport planes for logistics, ensuring field hospital equipment, food, tents, and bedding, as well as water supply.

[11] Numbers stated are cited from BAPPENAS report in cooperation with international partners, including the World Bank and Asian Development Bank.

The former president Susilo Bambang Yudhoyono arrived in Yogyakarta after the disaster on 27 May and set up an office to personally monitor the emergency relief efforts of the National Disaster Management Agency (at that time still named BAKORNAS). In addition to this, BAPPENAS coordinated the Damage and Loss Assessment (DaLA).

In order to rehabilitate the housing and promote the recovery of livelihoods, the Government of Indonesia (GoI) handed out 30 million rupiah to those whose houses were severely damaged, 10 million to those whose houses had suffered light structural damage, and 250 thousand rupiah per month to the affected families for the duration of one year. Moreover, the government provided additional impetuses by stimulating the (1) rehabilitation of houses through block grants; (2) rehabilitation of public facilities; and (3) revival of economic activity.

Chapter 4. Methodology: A Case Study, Methods and Framework

4.1 Introduction

In principle, a methodology maps the interconnection between research questions which is identified by the gaps in knowledge, and the research design along with its selected methods which are underpinned by relevant theories and assumptions (Hesse-Biber, 2010). The research seeks to explore the following overarching questions: *'to what extent can disaster recovery be enhanced through collaborative governance and social networks to significantly influence the revival of a local economy?'*. Accordingly, this chapter explains the case study rationale, the methods used and the link between the intellectual framework developed in the previous chapter and the empirical work.

This chapter is structured in three steps: the research design, methods and framework. First, the chapter presents the rationale for selecting cases. Second, the chapter argues for adopting a mixed-methods approach, and considers sampling methods, data collection techniques, and tools of analysis. Lastly, the discussion turns to the research process, and subsequently followed by reflecting on the field workflow and outlining the adjustments and limitations of the study.

4.2 Research Design: Case Study Research

A case study approach is widely used in many disciplines, in particular studies in business and management, law, medicine or psychology, political science, anthropology, education and sociology. Harvard University uses this approach in many learning activities as well as in the research processes (Flyvbjerg, 2006) and also made it popular again in the 1980s after many researchers neglected it due to the rapid development of the quantitative approach (Tight, 2010). Despite the increasing popularity of case study research, the literature offers a non-rigid definition of 'case study research'. Some authors treat it as an approach (Punch, 2014), while others construct it as a strategy (Verschuren, 2003), design (Hakim, 2000), method, or simply as 'a convenient label' for one's research (Tight, 2010).

A research design is defined as 'the point where questions raised in theoretical or policy debates are converted into research projects or programs that provide answers

to these questions' (Hakim, 2000, p. xi). A 'case' can be defined as 'a phenomenon of some sort occurring in a bounded context' (Punch, 2014, p.144). Furthermore, a case could take the form of an individual, community, social group, organization and institution, or nation, as well as event, process, role, relationship, and policy (Hakim, 2000; Punch, 2014). Gerring (2007, p. 19) argues that a 'case connotes a spatially delimited phenomenon (a unit) observed at a single point in time or over some period of time. It comprises the type of phenomenon that an inference attempts to explain'. In spite of the broad and diverse ways in which the literature defines a 'case' , it can be concluded that the main characteristics of a case study approach include (at the very least) a temporal and/or spatial dimension, and/or defined boundaries, and/or interconnectedness of phenomena (Tight, 2010; Verschuren, 2003).

In summary, there are five requirements for case study research: issue choice, triangulation, experiential knowledge, contexts and activities (Verschuren, 2003; Tight, 2010; Yin, 2014). Within the context of this thesis, the 'issue choice' refers to the focus of local economic recovery, while 'triangulation' is achieved by the use of a mixed-methods approach. The practices of collaborative disaster recovery governance in Indonesia generally, and in the chosen research sites of this study specifically, give rise to 'experiential knowledge'. The disaster governance policies and any other supporting regulations in Indonesia set out the 'context', and lastly, the actions involving recovery processes constitute the 'activities'.

The thesis opts for a case study design in order to provide a richly detailed account of the problems of disaster recovery governance with focus area on local economic recovery. Social network analysis is employed to examine and illuminate the specific cases, and the resulting findings are validated by juxtaposing them with other insights generated from the other methods analysis. (For the mixed methods, see Section 3.)

In selecting a particular case for study, this research refers to Bradshaw and Stratford (2000, p. 41), who highlight the importance of simple criteria, such as 'practical' and 'appropriate'. With regard to the practicalities, they emphasize that a researcher must have access and permission to do research on the selected case(s). Meanwhile, regarding the second criteria, Gerring (2007, p. 89) elaborates that 'appropriateness' might refer to: (1) the typicality of a case (i.e. typical characteristics) with the aim to provide useful insight into other contexts; (2) the extreme case (i.e. highly unusual case) which seeks to understand a very distinctive issue; and (3) the 'maximum variation' case (i.e. diverse variation) which illuminates the breadth and variation of

the phenomena under investigation (for the complete list and explanation of different techniques used to select case(s), see

Appendix C). Considering the overarching research question set out at the beginning of the chapter, this thesis refers to all three views of 'appropriateness', including 'maximum variation', 'typical' and 'extreme' in order to select the case for study accordingly. As a result, 'maximum variation' is examined by taking a comparative study of a few Indonesian disaster recovery cases in Chapter 5, while the 'typical' and 'extreme' cases are exemplified by the events of the Yogyakarta earthquake and Bantul Regency in Chapters 5 and 6 respectively.

In addition, the criteria that inform the selection of the case(s) for study also determine whether it is a descriptive study or an evaluative study, which rigorously tests a well-defined thesis. The descriptive case study is best suited to present occurrences of good and/or bad practice, while an evaluative case study seeks to arrive at suggestions for improving on a policy and/or theory, which underpin the policy itself (Hakim, 2000). Ultimately, the purpose of the case study research is to gain more in-depth understanding and to provide new insights into a complex phenomenon (Tight, 2010; Punch, 2014; Yin, 2014), as well as to refine the existing knowledge (Hakim, 2000). In line with this, the research project adopts a case study design, both for descriptive and evaluative purposes, with the aim of developing a conceptual recovery model and governance framework.

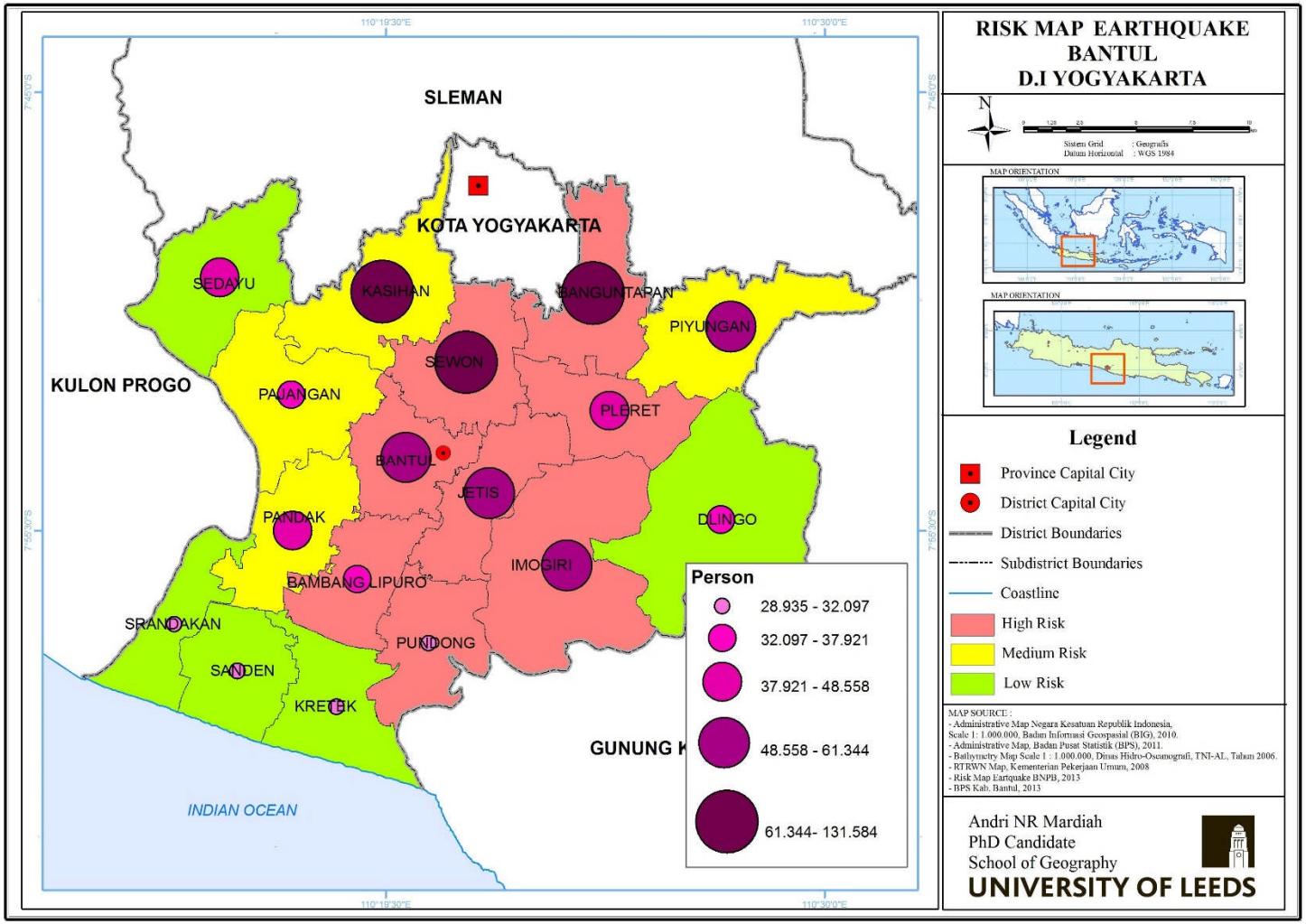
Since the proposed model/platform aims to accelerate the recovery process of people's livelihoods and the local economy of the impacted area as well as integrate them into a more sustainable development, therefore according to Stallings (2002), it is necessary to investigate the structure, relationship and process of disaster recovery, as well as to uncover unexpected issues that occur during the process. Furthermore, Stallings (2002) argues that disaster study is a unique research inquiry, given that a disaster constitutes a complex phenomenon within certain circumstances, which may consist of attributes, pattern, structures or process (Verschuren, 2003) of selected groups. Stallings (2002) also argues that a disaster study is by default a case study because of its unique and context-dependent problems, which arise from social, cultural, and political as well as physical contexts (explained in Yin, 2014). By studying specific cases, the thesis aims to gain insight into the actual recovery processes within a given network; hence, Bantul Regency and the Yogyakarta earthquake are selected as

appropriate case studies. That notwithstanding, there are additional reasons for selecting the above-mentioned cases, which are further detailed below.

First, among the other regencies in the Province of Yogyakarta, Bantul Regency is categorized as a high-risk zone (refer to Figure 3.2. Multi Hazard Risk Index). In 2013, the National Disaster Management Agency (BNPB, 2013, p. 91) placed Bantul Regency in second place (score 187) among the high risk zones, just after Kulon Progo Regency (score 203). Second, most of the area of Bantul Regency is classified as a multi-hazard and high-risk area in terms of the index of affected communities and the calculation of compound disaster risk index[12] (see Figure 4.1 below).

[12] The parameters used by government in the calculation of the disaster risk index in 2013 (i.e. IRBI 2013) are as follows: 1) Hazard index; 2) Index of affected people; 3) Potential Loss index; 4) Environmental loss index; and 5) Government capacity index (BNPB, 2013,p. 94-95)

Figure 4.1. Risk Map Earthquake of Bantul Regency



Third, the phenomenon of disasters had already occurred over the course of a decade, so presumably the medium-term recovery outcomes are available for further research. Fourth, Bantul Regency has achieved considerable growth in the micro, small and medium enterprises sector (MSMEs) due to its well-known handicraft shopping clusters and its role as a tourism destination, all of which have notably contributed to boosting the local economy (see Figure 4.3). Lastly, based on the existing research, Bantul Regency is seen to have significant social capital and cultural value (i.e. the Javanese culture), in which interestingly, despite considerable challenges, the government did not entirely collapse after the Yogyakarta earthquake in 2006, and was able to transform those social resources to create the conditions for a community-driven recovery process (see Chapter 5, Section 5.2).

4.3 Methods: the Mixed-Methods Approach

Triangulation, according to Hakim (2000), is one of the elements that makes a case study a powerful research approach. Effectively, the multiple sources of evidence, drawn from experiential knowledge, context and activities, allow a case study to present 'more rounded and complete accounts of social issues and process' (Hakim, 2000, p. 61). Triangulation denotes 'the combination of methodology' in a research project. The concept was introduced by Denzin in 1978 (Johnson et al., 2007), and became a foundation of the development of a mixed-methods design. In this section, the mixed-methods approach will be explained further.

Besides triangulation, there are other practical elements inherent in the mixed-methods approach, which have contributed to its popularity. Other elements that form part of undertaking mixed-methods research include triangulation, complementarity, development, initiation and expansion (for more detail, see Appendix D).

In the social and human sciences, combining various methods in a single piece of research had been done long before the terminology of 'mixed-methods' was coined, as evidenced by sociological and anthropological studies published in the early twentieth century (Johnson et al., 2007). Seemingly, most of these researchers were already aware of the usefulness of both qualitative and quantitative methods in addressing certain types of questions. A mixed-methods study is simply defined as the combination of at least one qualitative and one quantitative method in its (research) process (Bergman, 2008). To that effect, Tashakkori and Teddlie (2003, p. xx) define mixed-methods as 'a type of research design in which qualitative and qualitative approaches

are used in type of questions, research methods, data collection and analysis procedures, or in inferences'.

Within the context of this thesis, a mixed-methods approach is adopted in addressing the thesis' overarching research question: *'to what extent can disaster recovery be enhanced through collaborative governance and social networks to significantly influence the revival of a local economy*?'. The study considers a mixed-methods approach as most suitable for its inquiry because, first, this research employs a case study design, which theoretically involves 'triangulation' as an essential element, and triangulation is, in a broad sense, already part of a mixed-method design. Second, the overarching research question is derived into four sub-questions. Each of these sub questions is rooted in different issues and/or disciplines; therefore, each of these should also be addressed by the most appropriate method. In summary, the rationale behind using mixed-methods in this thesis is to approach different problems with the most appropriate methods. However, given that all sub-questions are tied to one overarching research question, the overall interpretation will be the product of integrating the multiple findings, generated through the qualitative and quantitative methods.

As a consequence of the above-mentioned justification, the thesis uses a sequential and layered approach. In this type of mixed-methods approach, a qualitative method is essential to explore human experiences in certain contexts, especially with regard to values, perceptions and social interactions (Hesse-Biber, 2010). The purpose is to increase the validity of results by using the results from one method to help develop or inform the other method (see Figure 4.2). Furthermore, the sequential and layered design is chosen to unpack the complexity of the underlying problems in this case study. The qualitative methods embedded in this approach are aimed at understanding every respondent as an expert (Hesse-Biber, 2010), and using the results as input to reformulate new insights and/or policy recommendations.

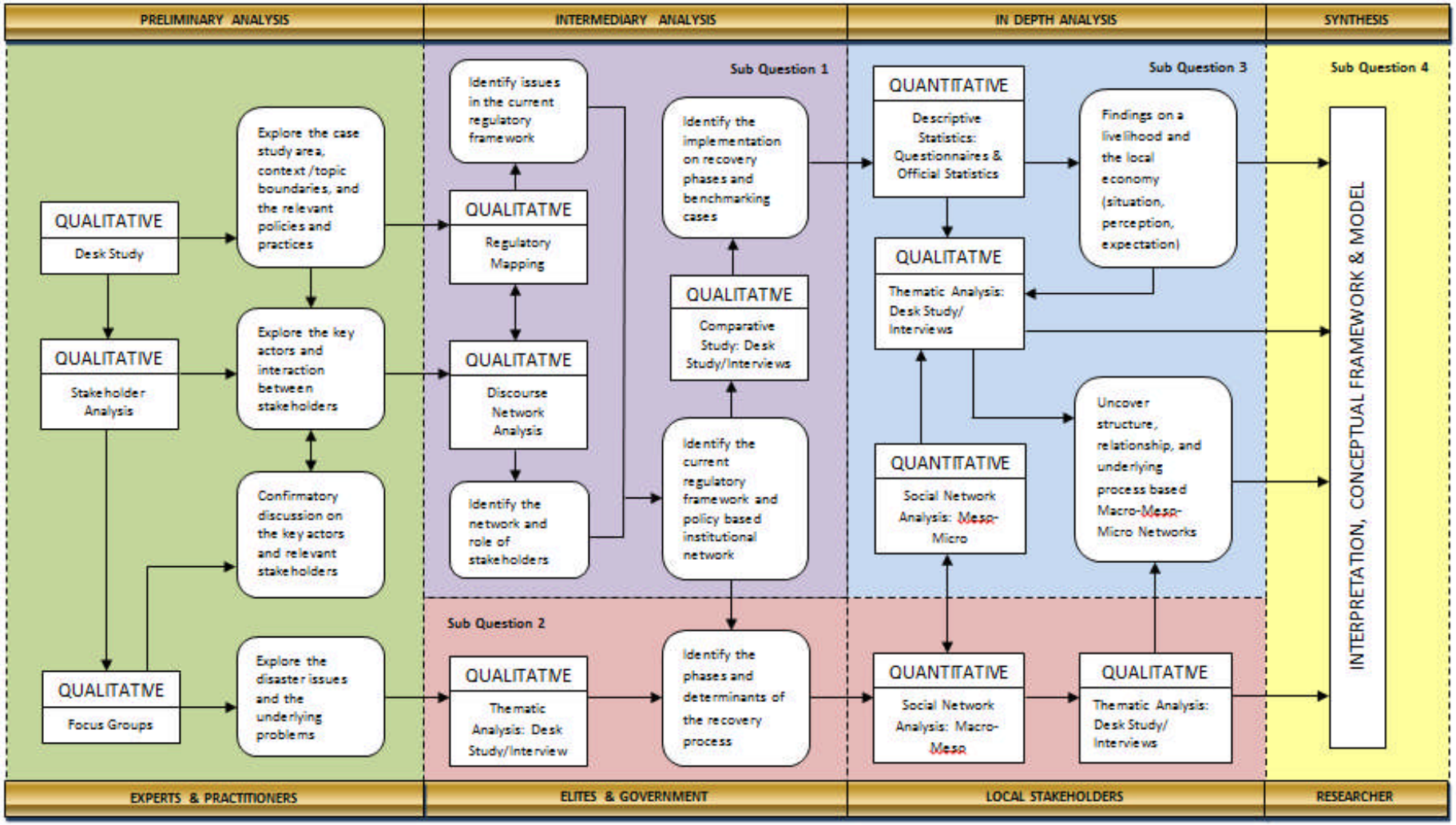
Figure 4.2 shows the way in which a mixed-methods approach has been employed in this study. The method consists of a sequential pattern and layered process with a clear connection between sub-questions. The sequential pattern implies that the previous results become the input for, or influencer of, the next stages of analysis. Beginning with a series of preliminary analyses (qualitative analysis, i.e. desk study, stakeholder analysis, and focus group discussion), the process is then split into two different paths. The upper path in the diagram explores the context established by regulations and

policies as well as the interactions between actors in the disaster management cycle (the upper path leads to sub-question 1), while the lower path examines the disaster issues and the underlying problems in a recovery process (the lower path leads to sub-question 2).

A dialogue between these two paths is established through the contribution of the regulatory and policy-based institutional network, which offers input to identify the recovery processes and its determinants (sub-questions 1 to 2), and then through the confirmatory process of findings from social networks at the levels of macro-meso (sub-question 2) and meso-micro (sub-question 3). The upper track involves qualitative methods (sub-question 1) and ends up with quantitative methods (sub-question 3). Meanwhile, the lower track starts with a qualitative method, followed by a quantitative method, and then concludes with a qualitative analysis of the thematic analysis to uncover the structure and underlying processes.

In addition, as can be seen in Figure 4.2, the flowchart is divided into four zones: (1) experts and practitioners; (2) elites and government; (3) local stakeholders; and (4) researcher. The first and second zones were dedicated to a preliminary analysis and an intermediary analysis respectively, the third zone to an in-depth analysis and the last one, the researcher's synthesis zones, aimed at elaborating and interpreting the empirical findings.

Figure 4.2. Flowchart of the 'Sequential and Layered' Mixed-Methods Approach



4.3.1 Sampling Method

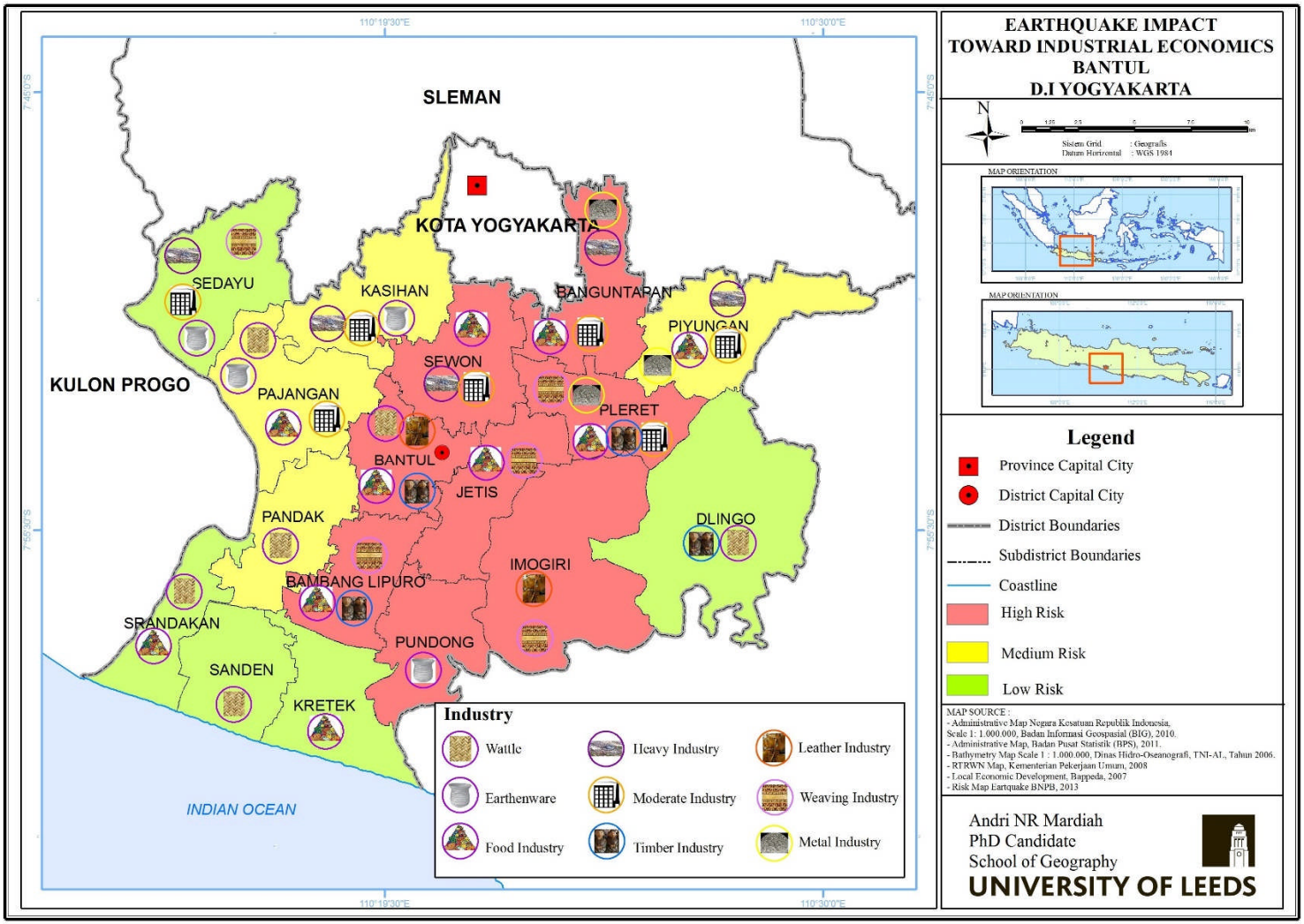
4.3.1.1 Sample Location Units

The sample is a set of elements drawn from the population. However, choosing a method of sampling depends on balancing accuracy against cost and feasibility (Schofield, 2006, p. 29). In general, sampling techniques can be classified into two groups: probabilistic sampling and non-probabilistic sampling. Probabilistic sampling types include simple random, stratified and cluster sampling, while the non-probabilistic sampling (or purposive sampling) can be divided into extreme case sampling, typical case sampling, maximum variation sampling, snowball or chain sampling, quota sampling, criterion sampling, opportunistic sampling, and convenience sampling (Bradshaw and Stratford, 2000; Schofield, 2006). This research study opted for purposive sampling by criteria and quota.

In order effectively to address the research question, the study employed purposive sampling to choose the sample location units (sub-district level) within the Bantul Regency, using the criteria of 'high to low level' of the following indices: 1) disaster risk index of affected community; 2) compound disaster risk index; and 3) the extraordinary progress of a cluster of micro, small and medium enterprises (MSMEs, see Figure 4.3). The latter criterion is gathered based on the comparison with other handicraft clusters in Bantul Regency in relation to the existing tourism attractions, in terms of the contribution to the revival of livelihoods and the local economy (this will be explained further in Chapter 6).

The criteria were given a weight, and the upper lists of sub-districts were chosen. As a result, the following sub-districts were selected as sample location units: Banguntapan, Sewon, Bantul, Imogiri and Kasihan. These five sub-districts were then used as the base locations for distributing the questionnaires to the respondents, interviewing local leaders, and observing the handicraft clusters.

Figure 4.3. Earthquake Impact on Industrial Economics



4.3.1.2 Questionnaire Respondents and Interviewees

In this research, the respondents for the focus groups were the selected 'experts and practitioners', according to certain criteria. The members of the focus groups included individuals who had engaged, or still engage, in the process of disaster recovery activities; who have background knowledge that is relevant to a disaster study; or who represent the community of members in the selected disaster-prone areas. The purposive sampling was based on certain criteria (criterion sampling) in order to ensure the generation of insights from a few 'right' people. The people who were selected to participate in the focus group discussions were expected to help surface issues that are central to this study, as well as to demarcate the scope of the research project. With regard to sample size, Bradshaw and Stratford (2000, p. 46) contend that there are no rules as to the sample size, as it depends on the purpose, usefulness, credibility and the available time and resources.

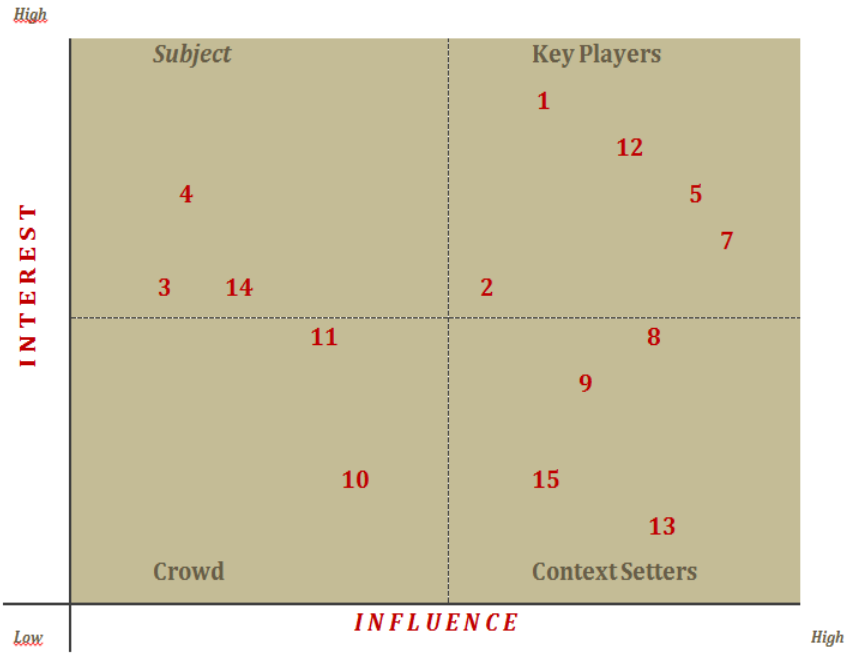
The study's interviewees were identified based on the results of the stakeholder analysis, which were subsequently confirmed through focus group discussions. The interviewees included key persons at the line ministries, international agencies and local governments. The purpose of these interviews was to collect as much information as possible about the background and chronology of the phenomena, policies and regulations relating to disaster recovery, which form the basis of post-disaster recovery governance and collaborative network processes. In addition, the interviews also served as a screening process to identify best practices, which were used in the next stage of analysis in the form of a comparative study.

The stakeholder analysis not only contributed to identifying the actors' involvement in the processes, but also to clarifying their roles, why they behave as they do, and then what the influence of the context and locus have over the way they behave now (Bradshaw and Stratford, 2000). The above-mentioned questions were partly meant for the interview process and could only be addressed systematically when the stakeholders had been already identified. In short, the choice interviewees was based on the stakeholder analysis and the criteria relevant to the aim of the research and research questions, as well as the practical aspects that occurred during the fieldwork.

There are debates among scholars about whom or what stakeholders are exactly. Freeman (1984, as cited in Reed et al., 2009) distinguishes stakeholders on the basis of

'who affects' or 'who are affected'. The matrix below shows how the concepts 'affect' and 'affected' in the stakeholder analysis are represented by 'interest' and 'influence'. The table depicting the complete stakeholder analysis can be seen in Appendix E.

Figure 4.4. Interest-Influence Matrix



Note:

1	*National Disaster Management Agency (BNPB)*	6	*Regional Development Planning Board (BAPPEDA)*	11	*Business Entities (i.e. Micro Small Medium Enterprises/MSMEs and craftsmen)*
2	*National Development Planning Agency (BAPPENAS)*	7	*Cooperative and SMEs Board*	12	*Local Leaders (local opinion leader, including: Former head of regency)*
3	*International Agency (UNDP)*	8	*Public Works Unit*	13	*International/National/Local NGO (i.e. Dompet Dhuafa, Mercy Corps)*
4	*CSR Program (Unilever Indonesia Foundations)*	9	*Local MFIs/Cooperatives*	14	*Practitioners (World Bank)*
5	*Regional Disaster Management Unit (BPBD)*	10	*Local Business Association (i.e. ASMINDO, KADINDA, Handicraft cluster/groups)*	15	*Experts/Academics (IPB, UGM, KOBE University)*

The first rule that applied for choosing respondents to complete the questionnaire was 'no respondents will be either included or excluded on basis of age, gender, disability, ethnic origin, religion, or sexual orientation'. All respondents were literate persons, and thus able to understand the overall aims and objectives of the research study, and to

assess the impact of the research on their personal lives. Nevertheless, surveyors stood by to help respondents if they had difficulties understanding the questions. Given that the topic of this study was not sensitive, there was no risk (i.e. physical, emotional or financial) for the respondents. However, to avoid any risks that may arise, the default approach was to anonymise the data when coding it into the database system, unless the person was willing to be quoted.

4.3.2 Data Collection Methods: Quantitative and Qualitative Data

Quantitative data was collected from official documents published by government agencies (secondary data, e.g. statistics, business/financial and network data) and through questionnaires (primary data, e.g. social network and risk perception data). In order to analyse the evidence relating to the recovery of the local economy in a case study area, the official statistics were collected. Subsequently, the next step sought to further explore the findings from these secondary data by analysing the questionnaires, which were collected through purposive sampling limited by quota, and then scrutinised and grouped on the basis of the possible themes (i.e. Thematic Analysis). The purpose of these activities was to identify and investigate the underlying factors or lessons within the network relevant to the case study's aims. In Social Network Analysis, a population of interest is bounded by the location, which was identified in the previous section. The population included home-based industries, micro, small and medium business entities, and professional organizations and NGOs within the selected case study areas.

Meanwhile, qualitative data were collected between June and December 2015 from a series of focus groups, semi-structured interviews and a structured literature review. The focus groups were part of the preliminary research stage, while the semi-structured interviews and the literature review formed an essential part of the next stage of fact-finding and synthesis. With the mixed-methods approach, the purpose of one data collection method might vary depending on, and relative to, the position of another data collection method employed within the same study. To illustrate this point, Cameron (2000, p. 87) offers different views on combining focus groups (qualitative method) with questionnaires (quantitative method). When a questionnaire is administered after the focus groups have been held, then it may serve the purpose of validating the insights and understandings gained from the focus group discussions. Conversely, when the questionnaire precedes the focus groups, then it can play the role of a preliminary survey to surface key issues (a statistical reality) to be discussed and

unpacked further in the focus group. For this research, the primary data were collected sequentially, through the following procedures.

Focus Group Discussion (FGD) is defined as the meeting of a few people (between four and ten people) to discuss a specific issue or topic presented by the researcher (Cameron, 2000). The key characteristic of this data collection method is the dynamic interaction between the researcher as a moderator or facilitator and the members of the group, as well as between members within the group. It is said to be a dynamic process, as the group discussions may develop in unforeseen ways driven by the interactive communication among the group members, whereby 'one comment can trigger a chain of responses' (Cameron, 2000, p. 84). Within the context of this study, three series of focus groups were held. One served the purpose of piloting the process[13], and the other two formed part of the actual research process. Each of the focus groups was made up of between four and six people. The focus groups were held in Jakarta, at a venue that was neutral for the participants but offered sufficient facilities to support the research activities. The time and place had been arranged in accordance with all the participants' preferences, and thus was convenient for everyone. The focus groups took approximately one and a half hours.

Interview is 'a data gathering method, in which there is a spoken exchange of information' (Dunn, 2000, p. 51). This study opted for a semi-structured interview, which is also known as guided conversation (Dunn, 2000; Hancock and Algozzine, 2011). During the process, the interviewer has a list of prepared questions, although there are no strict rules with regard to the wording and/or sequence of questions. The strength of the semi-structured interview approach is that the interviewer is able to gather data in a systematic and comprehensive manner, and has the flexibility to manage potential gaps with a natural conversational flow. The semi-structured interview is placed in the middle of the continuum between 'interview as informal conversation' (unstructured) at one end and 'interview as fixed responses' (structured) at the other (Dunn, 2000). The increased level of flexibility offered by semi-structured interviews reduces the comparability of responses between respondents. However, given that comparing and contrasting the interviewees' responses was not an aim of this study, such limitation can be disregarded. The interviews were held at locations

13 Piloting means doing small trials of the method, before the real investigation is conducted. This is meant to assess 'the adequacy of the research design and of the instrument to be used'. From Wilson, M. and Sapford, R.J. 2006. Asking Questions. In: Sapsford, R.J. and Jupp, V. eds. *Data collection and analysis.* London: SAGE.

that were convenient to the interviewees, which was either in Jakarta or Yogyakarta. All interviews were approximately completed in no more than two hours, which also included the time taken to introduce the study.

Questionnaire was selected as a method because it facilitates the collection of quantitative data in a structured and comparable manner. Since the purpose of questionnaires is to collect data using the same type and order of questions without any intention to uncover 'motives', hence administering this method of data collection is far quicker than any other method, such as interviews. Here too, piloting is essential in order to check the length of time taken by respondents to complete the questionnaire, and to ensure whether the questions are unambiguous and easy to understand. The process took approximately 30-40 minutes. However, the second attempt or follow-up meeting was processed and carried out via telephone or Skype. Surveyors to help administer the questionnaires were recruited based on their skills and performances in conducting surveys and fieldwork over the last two years. All surveyors underwent one day of training and briefing before going to the field, and were required to follow a particular protocol during the fieldwork.

Desk Study is a systematic review of government reports, credible agency reports, books, academic publications, and maps as well as documentary films. The review is meant to gather information on policies, regulations and practices regarding livelihood and the local economy recovery in the post-disaster period. Recorded practices were scrutinized in order to extract the thematic lessons learned from benchmark case(s), while documents on policy and regulation were analysed using discourse network analysis and regulatory mapping.

4.3.3 Methods of Analysis

The mixed-methods approach is used to address the overarching research question of this study, which has been divided into four sub-questions (see Research Framework in Section 4). 'As each method reveals its own aspects and parts of social reality' (Verschuren, 2003, p. 131), each of the sub-questions also needs to be addressed by employing a specific method. The qualitative methods that the study used for its analysis included stakeholder analysis, regulatory mapping, comparative analysis and thematic analysis. Meanwhile, the quantitative methods involved descriptive statistical analysis and social network analysis. Below are the analytical tools used in this thesis.

Stakeholder Analysis

According to Reed et al. (2009, p. 1933), a stakeholder analysis can be defined as a process that (1) defines aspects of social and natural phenomena affected by a decision or action; (2) identifies individuals, groups and organizations who are affected by or can affect those parts of the phenomenon (this may include non-human and non-living entities and future generations); and (3) identifies the priorities these individuals and groups have for involvement in the decision-making process. Policy analysts view stakeholder analysis as a tool 'to understand how information, institutions, decisions, and power shape policy agendas for interest groups in social networks' (Ibid.). Some sociologists maintain that stakeholder analysis is capable of empowering marginal stakeholders, allowing them to influence decision-making processes. From a political point of view, stakeholder analysis is used to facilitate the transparent implementation of decisions or objectives, understand the policy context, and assess the feasibility of future policy options (Reed et al., 2009, p. 1934). Thus, there is a tendency to focus on issues around power dynamics and transparency, as well as equity in decision-making processes.

Regulatory Mapping (RegMAP)

RegMAP is a method to map and assess various regulations and legal documents in order to gain an in-depth understanding of the impacts and/or potential problems. RegMAP also helps in defining the responsibilities of institutions and stakeholders, and precluding duplication of responsibilities.

Discourse Network Analysis (DNA)

DNA is a method to map the network of actors relevant to particular policies or strategies. It was derived from policy networks and advocacy coalition framework theories, and was initially aimed at investigating the influence of political actors in the legislative and policy-making processes (Leifeld, 2013).

Qualitative Comparative Analysis (QCA)

Qualitative Comparative Analysis (QCA) is a systematic way of studying the configurations of cases. QCA is used when employing case-study research methods, and constitutes a truly a mixed-methods approach to conducting research. Typically, QCA analysts interpret data qualitatively, whilst also looking at the causality between the

variables. QCA is best suited to small- to medium-N case-study projects with between 3 and 250 cases (University of Manchester, 2018).

Social Network Analysis (SNA)

Social network analysis is used widely in social and behavioural sciences as well as in economics, marketing and industrial engineering. The social network perspective focuses on relationships among social entities, and maps the patterns and implications of these relationships. The focus on relationships is an important addition to standard social and behavioural research, which is primarily concerned with the attributes of social units (Wasserman and Faust, 1994). Social Network Analysis includes matrices that organize data according to relational ties that bind stakeholders (Reed et al., 2009). SNA is useful for capturing different kinds of relations, as well as their strengths. With the record being in a quantitative form, it is claimed that it is easier to summarize and draw inferences from it. More about social network analysis can be seen in Appendix F.

Descriptive Statistical Analysis

Descriptive statistics focuses on describing the data presented. In contrast, inferential statistics enables the researcher to draw conclusions about the wider population from the sample data, and to examine differences, similarities, and relationships between different variables. Descriptive statistics include accounts of frequency, percentages, means and standard deviation (Calder and Sapsford, 2006, p. 211).

Thematic (Content) Analysis

Thematic analysis is a tool that enables the deconstruction of different types of text, such as text containing factual information, theoretical interpretations, methodologies and much more, in order to reveal multiple meanings, ideologies, and interpretations (Forbes, 2000). The process of comparing and contrasting data within certain coded thematic categories offers an advantage to the researcher when reassigning and/or re-scrutinising the original text (Boulton and Hammersley, 2006).

4.4 Research Framework: Research Process and Reflection

4.4.1 Research Process

Prior to conducting field research activities, a series of preparations were conducted, including drafting questionnaire, briefings for the surveyors administering the questionnaires, piloting the various materials, and continuously conducting evaluation and improvement.

The field research was conducted within five selected sub-districts in the Bantul Regency. The selection process of these five sub-districts is described in Section 2 of this chapter. The researcher scrutinised official statistics and secondary data (including, for example, government reports) available on the sub-districts and regency websites. Thus informed by multiple secondary data sources, the researcher set out to develop the draft questionnaire. Prior to conducting the fieldwork, all research surveyors participated in a half-day briefing. Each of them was asked to familiarise him/herself with the questionnaire, and was also encouraged to raise technical concerns or any inquiries they had.

Pilot tests were held to assure the quality of the FGD and the questionnaire. The first pilot test for the FGD was conducted at one of the ministry offices in Jakarta in May 2015. The pilot test sought to examine the type of questions, the duration of time required for the whole process, and the kind of information that each question generated. The questionnaire was piloted in Yogyakarta in November 2015. The second pilot test sought to assure the comprehensibility of the questions, the duration of time required for respondents to complete the questionnaire, and to troubleshoot any other issues that arose during the pilot test.

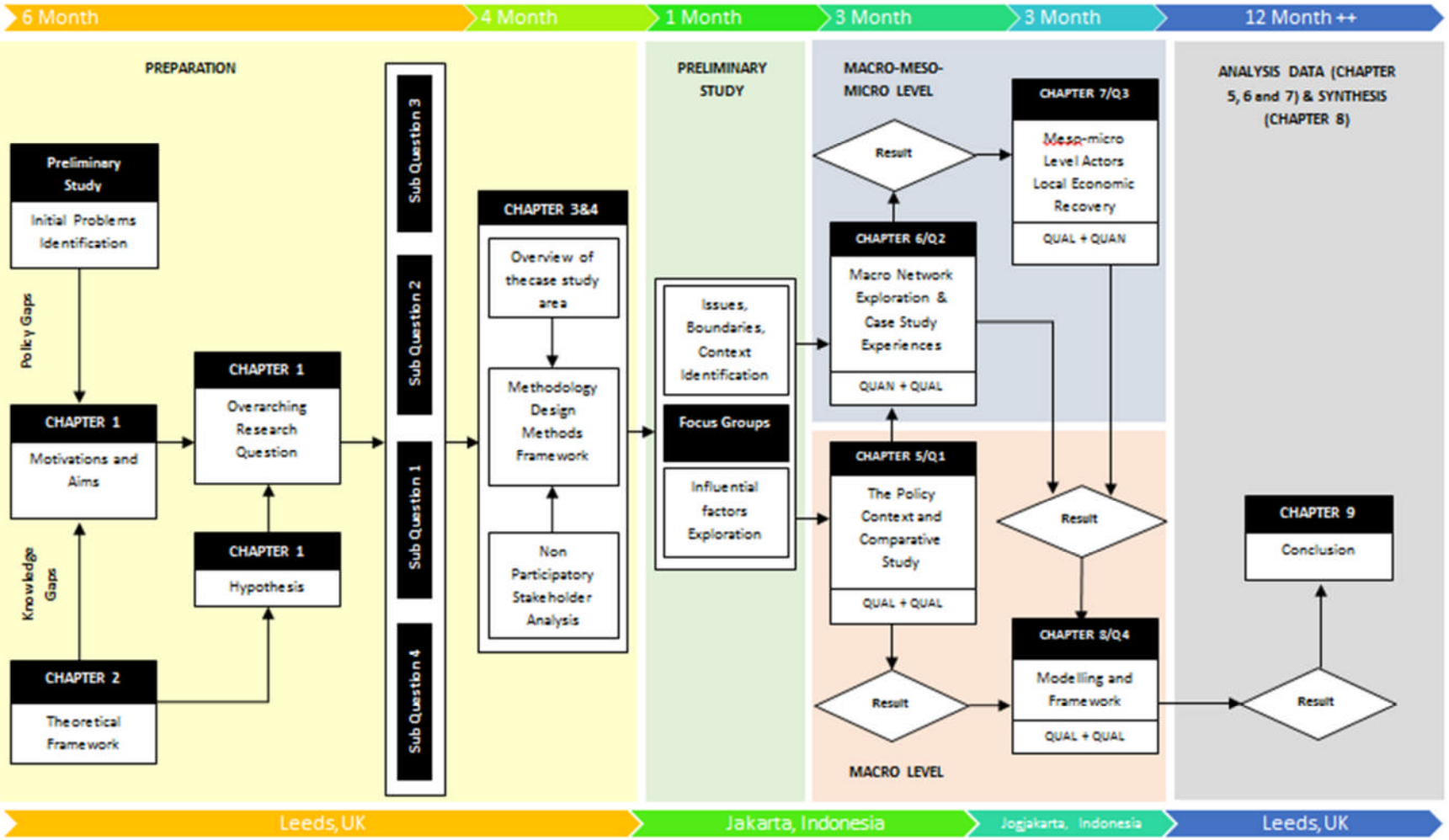
Following the pilot test, the FGD methods, process and instruments were improved accordingly. Moreover, the researcher recognised the importance of securing a neutral and comfortable place for the FGD participants. Similarly, after piloting the questionnaires, the questions were adjusted to ensure the desired information was elicited. There were also adjustments to the optimum duration of time for the respondent, respondent validation process, and supporting tools required such as cameras and recorders. Research surveyors distributed the questionnaires, helped to communicate the questions, and input the answers on the online platform that had been provided. The interview guide was not piloted, and the researcher conducted the interviews by herself without any help from research assistants.

The fieldwork took place in Indonesia and was conducted in the following two phases:

(1) The first phase involved seven months of fieldwork, starting at the end of May 2015. The first research sites were in Jakarta (the original plan was three months, but this was extended up to four) and Yogyakarta Province and Bantul Regency (the original plan was four months, but this was shortened to three). The researcher stayed in the capital city of Yogyakarta Province, and then travelled to various locations in Bantul Regency during office hours.
(2) The second phase involved two months of additional fieldwork in Jakarta, starting early August 2016. During this period, the researcher conducted interviews with stakeholders from the private sector and NGOs.

The research flowchart in Figure 4.5 depicts the timeline and location of the research, the outline of the research process, the map and steps of preparation, preliminary study, fieldwork (macro-meso-micro level respondents), as well as analysis, writing up and synthesis. Each of the four sub-questions, which aggregate to form the overall research question, is addressed by one empirical chapter. Accordingly, sub-question one is discussed in Chapter 5, sub-question two is addressed in Chapter 6, sub-question three is dealt with in Chapter 7, and sub-question four is considered in Chapter 8.

Figure 4.5. Research Process Flowchart



4.4.2 Post-Fieldwork Reflection

During the field-work, some adjustments were made, which are described in the following sections.

4.4.2.1 Research Adjustments

The researcher's position in this inquiry differed depending on the phase of the research. During the focus group discussions, the researcher played the role of facilitator, holding up cue cards showing various topics, in order to allow the process to flow naturally. Here, the participants were the experts and practitioners.

During the semi-structured interviews, the researcher took on the role of a journalistic investigator, who seeks in-depth information on a particular issue, based on the preliminary data analysis, desk studies and the focus group results. The respondents involved were government officers, local leaders, academics, practitioners, international agencies and NGO officers, some of whom were interviewed at their homes, others at their offices, and the rest during meetings arranged by the researcher.

The questionnaires and follow-up interviews were administered to local stakeholders, mostly business managers or owners of MSMEs. In this context, the researcher positioned herself as an outsider and a good listener in order to collect as much as information as possible. The process was iterative and the researcher kept returning to the informants for clarification and to reveal the actual process. This iterative process was important, as the research result relied on a retrospective data (i.e. past experiences).

4.4.2.2 Research Limitation

There are many debates and much criticism around 'case study' practices. Flyvbjerg (2006) offers a complete summary of the issues, which is endorsed in parts by Verschuren (2003), Ruddin (2006), and Yin (2014). The key criticisms include:

(1) Context-independent knowledge (general/theoretical) is more valuable than context-dependent knowledge (concrete/practical) (Flyvbjerg, 2006)
(2) Lack of internal validation. It is argued that it is difficult to avoid a bias toward verifications (Verschuren, 2003; Flyvbjerg, 2006)
(3) For generating hypotheses. It is claimed that the case study is used for generating a hypothesis rather than testing a hypothesis (Flyvbjerg, 2006)

(4) Problem of generalizability. Case study research has a minimum level of results generalizability (i.e. external validity and reliability) as a consequence of only a few cases being explored (Verschuren, 2003; Yin, 2014; Flyvbjerg, 2006; Ruddin, 2006). Therefore, it is claimed that it cannot contribute to the development of knowledge (Flyvbjerg, 2006);
(5) Problem of developing a final proposition or theories (Flyvbjerg, 2006).

Bradshaw and Stratford (2000, p. 38) point out that 'no single correct approach to research design can be prescribed'. The arrangement of stages and order, and the ways in which methods are combined in a case study are very specific; thus, it depends on the focus of the study and the research aims. In designing a mixed-methods study, Johnson et al. (2007, p. 127) suggest that a researcher ought to fulfil the two fundamental principles of the mixed-methods research: (1) complementary strength, and (2) non-overlapping weaknesses. The 'complementary strength' principle means all data and information gathered should be relevant to the aims of the research. In this case, Johnson et al. (2007) refer to any or all the list of purposes made by Greene et al. (1989), i.e. triangulation, expansion, complementarity, development and initiation. The second principle, 'non-overlapping weaknesses', underlines the importance for the researcher to reduce the potential (design) weaknesses by integrating methods that have different weaknesses.

Whenever these principles are met, then the dialogue between the qualitative and quantitative methods would indeed become an invaluable point of strength. Under these circumstances, the dialogue would foster an in-depth understanding and uncover novel insights and relevant findings. To dialogue does not mean to converge with the final results, as the dialogue must be seen as a process to apply interpretation on 'multiple levels and in multiple realities that inform one another' (Hesse-Biber, 2010).

In other words, a coherent set of methods and procedures is essential in order to generate complete findings, including qualitative meanings and numerical data, out of which the overall results can be constructed. In this thesis, the researcher has applied the mixed-methods in a comprehensive and appropriate way, to which Figure 4.3 is testament. The biggest limitation might be the retrospective data provided by respondents, given that the disaster in question occurred a decade ago.

Chapter 5. Understanding Disaster Recovery Governance: Indonesian Regulatory Framework and Institutional Network

5.1 Introduction

Disasters and their impacts are unexpected, hazardous, and cause complex problems. Increases in human population, along with the effects of climate change, mean that disasters are becoming ever more complex, frequent and uncertain. This empirical chapter proposes that, in order to deal with disasters, there should be a paradigm shift from government to governance, thus placing more emphasis on inter-organizational arrangements (Peters, 2013). A focus on the governance regime has been chosen to enable the anticipation of various problems in the public sector that cannot be handled solely by one organization (Huxham et al., 2000). Hitherto, terminologies such as 'coordination', 'cooperation', 'partnership', 'joint-working', 'alliance', 'collaboration', and 'network' have all been part of the governance discourse, and are continuously discussed by many proponents of this regime. Unfortunately, case study investigations of collaborative governance practices, especially in unexpected and uncertain situations, such as disasters and their associated recovery phase, remain the least explored (Kapucu, 2014).

This chapter explores the following research question: 'How is the regulatory and institutional framework in the recovery phase organized so as to revive the local economy?'. Accordingly, the chapter seeks to investigate the regulatory framework and institutional network at a national level and, on that basis, analyse the comparative policies of Indonesia's disaster-recovery governance, and their implementation, between 2005 and 2015. Local and international scholars have undertaken considerable research into Indonesian disaster governance (Lassa, J., 2011; Djalante, R. et al., 2011; Djalante, R., 2012; Seng, 2013; Kusumasari, 2014a; Grady et al., 2015), with the number of publications in this field constantly increasing, especially after the 2004 tsunami disaster. However, most of the literature only focuses on specific locations and/or occurrences instead of discussing the issue from a macro-policy and/or governance perspective.

The chapter consists of six sections. Following the introduction, the research approach, including theories and methods, is laid out within the context of an overview of

Indonesian disasters from the end of 2004 to 2015. The third to fifth sections present the study's analysis and findings based on (1) the regulatory framework of Indonesian disaster-related regulations from 2005 to 2014; (2) the institutional arrangements mainly in accordance with the Medium Term Development Plan 2014 to 2019 and Law 24/2007, as well as some of its derivative regulations; and (3) the comparison of disaster recovery policies and their implementation in Indonesia during the period from 2005 to 2015. Finally, the sixth section offers concluding remarks.

5.2 Research Approach

The following sub-sections describe the research approach, including underpinning theories and methods. They also provide an overview of the disasters that occurred in Indonesia between the end of 2004 and 2015, which serves to map out the background and contextualise the analysis in the subsequent three sections.

5.2.1 Underpinning Theories

In general, governance can be defined as 'the attempts of the state, and its allies in the private sectors, to steer the economy and society' (Peters, 2013, p. 78). Governance may involve activities that utilize resources and create more consistent and coordinated policies (Peters, 2013), and through interaction among actors despite their conflicting objectives (Duit et al., 2010).

Concepts of collaborative governance are mainly influenced by policy network theory (Enroth, 2013), institutional theory (Ostrom, 1990; Ostrom, 2005; Peters, 2013), organizational theory (Williamson, 1995; Christensen, 2013), the economics of transaction costs, and rational choice theory (Williamson and Masten, 1999; Dowding, 2013). From an institutional perspective, the new governance approach is based on the assumption that 'the conventional institutions of government are no longer capable of providing effective steering on their own and must be supplemented, or supplanted, by social actors' (Peters, 2013, p. 78). In short, collaborative governance emphasizes the inter-organizational arrangements across institutional boundaries (such as public agencies, levels of government, and/or public/private/NGOs/CSOs) that are 'involved in working relationships with each other in the pursuance of common purpose' (Huxham et al., 2000, p. 341). Huxham et al. (2000) argue that this new concept of governance emerged in the face of the challenges of 'complexity and diversity'. Meanwhile, Frederickson and Smith point to the fact that 'governments have become less hierarchical' (2003, as cited in Silvia, 2011, p. 66). In addition, there is a tendency

to form collaborative networks to govern, given that the boundaries of responsibility, authority and activity across different levels of government have become blurred (Silvia, 2011).

By definition, a (social) network refers to the 'ties and networks (that) constrain resource flow by keeping it within ties and networks' (Jiang and Carroll, 2009, p. 52). In this context, resources may exist in the form of information, economic, intellectual or emotional resources (Moody and Paxton, 2009). The collaborative network environment can be complicated given the differing objectives each network member has for the outcome of their combined effort. Therefore, it is essential in collaborative governance to ensure agreement regarding the network's target and strategy. Another critical foundation is to establish a clear playing field in the form of roles, norms, regulations and legitimacy among the network members (Silvia, 2011).

5.2.2 Methods

This chapter adopts a mixed-methods approach including regulatory mapping (RegMAP), discourse network analysis (DNA), and comparative analysis based on a series of focus group discussions (n = 3), interviews (n = 20), and government documents and regulations (n > 30) as well as official reports. The focus groups and semi-structured interviews were targeted at policymakers and professionals in the disaster governance field in order to collect information from relevant stakeholders, especially from experts, practitioners (local/international NGOs), and government officers. The official reports came in the form of policies, regulations, manuals/guidelines and statistics.

RegMAP is a method to map and assess the various regulations and legal documents in order to gain an in-depth understanding of the impacts and/or potential problems. RegMAP also helps in defining the responsibilities of institutions and stakeholders, and in precluding duplication of responsibilities (applied in Section 3). DNA is a method to map the network of actors in relation to particular policies or strategies (applied in Section 4). Derived from policy networks and advocacy coalition framework theories, DNA was initially designed to investigate the influence of political actors in the legislative and policy-making process (Leifeld, 2013). Thus, both methods aim to assess the playing field of collaborative processes among stakeholders, and their influence towards outcomes. In addition to this, qualitative comparative analysis is employed to facilitate comparisons between some selected cases (applied in Section 5), in order to

reveal the general underlying structure which generates or allows such a variation. In this chapter, the comparison is between various disaster recovery policies, and their respective implementations, used to inform justifications of the choice of case study in Chapter 6 and 7.

5.2.3 Indonesia Disasters Overview (end of 2004– 2015)

Geographically, Indonesia is a vast archipelago (17.508 islands), located on a Pacific ring of fire and the fault line of four tectonic plates, between 6°08' north and 11°15' south latitudes and between 94°45' west and 141°05' east longitudes, and is home to 75 percent of the world's active volcanoes (122 volcanoes). Located between the Asian and Australasian continents, Indonesia is bound by the South China Sea in the North, the Pacific Ocean in the North and East, and the Indian Ocean in the South and West. Administratively, Indonesia consists of provinces, and within each province there are regencies and/or cities. According to data published in 2010, there are 33 provinces and 497 regencies and cities, covering a total area of approximately 1.9 million km^2 (BPS, 2010).

According to the Disaster Risk Reduction Global Review (2007), Indonesia is among the top ten most at-risk countries in the world, and ranked 12^{th} highest for multiple hazards (International Organization for Migration, 2011). In terms of the population's exposure to earthquakes and tsunamis, a recent statistical study drawing on 100 years of historical data (EM-DAT/CRED International Data Base, from 1900 to mid-2012), has calculated that the average lengths of inter-occurrence periods for earthquakes and tsunamis in Indonesia are 1677.77 and 490.71 days respectively (Parwanto and Oyama, 2014, p. 128). On 26 December 2004, an earthquake followed by tsunami waves struck Aceh. At the time of writing, it remains the greatest disaster recorded in Indonesian history. According to the EM-DAT/CRED International Disaster Database, this tsunami, which killed 226,408 people, is classified as the third largest disaster in the 30 years between 1975 and 2005. It is only surpassed by the 1983 drought in Ethiopia and Sudan, which killed 450,000 people, and the 1976 earthquake in China, which took the lives of 242,000 people.

In the area around Indonesia, the earthquake caused a tsunami that swept along 800 km of the coastal area of Aceh. In addition to the 130,000 people killed, as many as 37,000 people disappeared and 500,000 people were displaced. Only a few months later, on 28 March 2005, an earthquake shook the area offshore of Sumatra near Nias

Island. As many as 900 people died and 40,000 were left homeless. While the disaster recovery in Aceh and Nias had only just begun, disaster struck again, but this time in Yogyakarta and Central Java. On 27 May 2006, an earthquake that measured 5.9 on the Richter scale occurred, resulting in a death toll of 5,760 people with 388,758 houses being either mildly, moderately or severely damaged. Still in the same year, on 17 July 2006, a 6.8 on the Richter scale earthquake followed by a tsunami struck the Pangandaran area, Kabupaten Ciamis, West Java. As a result, the coast from Garut to Yogyakarta was damaged and the death toll reached 641 people, with 44 missing. Following this, on 6 March 2007, another earthquake (6 on the Richter scale) hit West Sumatra in Sumatra Island. This earthquake caused the deaths of 52 people and thousands of homes were damaged. In Bengkulu, on 12 September 2007, an earthquake (7.9 on the Richter scale) damaged parts of West Sumatra. The total number of damaged buildings reached 64,609 housing units.

According to the International Strategy for Disaster Reduction (ISDR), Indonesia is listed among the top 10 of the most disaster-stricken nations, so it is not surprising that disaster incidents have continued in Indonesia to this day. The entire history of disaster events, as extrapolated from various government reports (BAPPENAS, 2010; BAPPENAS, 2014a), can be summarized as follows. In the period between the end of 2004 and 2015, various disasters hit Indonesia: among others, the earthquake and tsunami of Aceh-Nias (2004), the earthquake of Yogyakarta and Central Java (2006), the Jabodetabek flood (2007), the West Sumatra earthquake (2007), the earthquake of West Sumatra and Bengkulu (2007), the earthquake and tsunami of Mentawai (2010), the eruption of Mount Merapi (2010), the Wasior flood (2010), the cold lava of Mount Merapi (2011), the Jabodetabek flood (2013 and 2014), the eruption of Mount Sinabung (2013 and 2014), the eruption of Mount Rokatenda (2013), the Manado flood (2014), the Jakarta and Pantura flood (2014), the eruption of Mount Kelud (2014) , and the land and forest fires of Riau (2014).

The above incidents have caused severe damages and losses, in the form of human casualties, economic losses, and the destruction of natural resources and the environment (BAPPENAS, 2014a). By definition, disaster strongly correlates with economic cost (Hallegatte and Przyluski, 2010), and in fact, the losses have been used as common indicators to classify whether incidents are disasters or not. The table below illustrates the major disasters that occurred in Indonesia from the end of 2004 to 2015, and their implications for disaster recovery financing.

Table 5.1. Damage and Loss from Disasters in Indonesia

Disasters	Time	Damage and Losses (billion rupiah)
Earthquake & Tsunami: Aceh &Nias	Dec 2004	41,400
Earthquake: Yogyakarta & Central Java	May 2006	29,150
Tsunami: Pangandaran	July, 2006	1,300
Flood: Jabodetabek	Feb, 2007	5,184
Earthquake: West Sumatera	March, 2007	1,080.7
Earthquake: Bengkulu & West Sumatera	Sept 2007	1,790.9
Flood: Jabadotabek	Feb 2007	5,184
Earthquake: West Sumatera	Sept 2009	20,867
Earthquake: West Java	Sept 2009	6,900
Flood: Wasior, Papua Barat	Sept 2010	28,0.58
Earthquake & Tsunami: Mentawai Island & West Sumatera	Oct 2010	34,892
Volcano Eruption: Yogyakarta & Central Java, Mount Merapi	Oct 2010	3,628.71
Flood: Jabodetabek	Jan 2013	8,340
Earthquake: Aceh Tengah & Bener Meriah	Jul 2013	13,566
Flood: Manado	Jan 2014	15,699
Volcano Eruption: Mount Kelud	Feb 2014	12,550

Source: BAPPENAS (2014a)

5.3 Disaster Governance Regulatory Framework (2005–2015)

A rapid change in the DRR regulatory framework took place between 2004 and 2006 with the international Hyogo Framework for Action (HFA) as one of the external driving forces, and the series of catastrophic occurrences in Indonesia as the foremost internal driving force behind the national reform (INT6, as documented in BAPPENAS, 2015b). Three years after the Hyogo Declaration, and following public consultations involving professionals, academics and communities, as well as a series of debates within the legislative forum, the GoI finally ratified the Disaster Management Law (Law 24/2007). Since then, all projects relating to disaster management implementation in Indonesia refer to this law (BNPB, 2008). The law is expected to legally frame and govern disaster management, as well as to encourage clearer and more effective coordination among stakeholders in order to assist the government as the primary actor in the field of disaster management (The House of Representatives of Indonesia).

Accordingly, the paradigms within disaster management practice shifted: 1) from responsive to preventive; 2) from sectoral to multi-sectoral; 3) from government initiative to shared responsibility among stakeholders; 4) from centralized to decentralized; and finally 5) from merely mitigation to comprehensive disaster risk reduction. In addition to the law and its derivative regulations, the GoI also endorsed

the formulation and implementation of the National Plan on Disaster Management (*Rencana Nasional Penanggulangan Bencana/Renas PB*) and the National Action Plan on DRR (*Rencana Aksi Nasional Pengurangan Risiko Bencana/RAN PRB*) (BNPB, 2006; BNPB, 2010a; BNPB, 2010b). In line with the aforementioned regulations, there are other relevant laws that complement and supplement one another.

Table 5.2 shows the regulatory milestones of the disaster management framework, which evolved over the period of two National Medium-Term Development Plans (*Rencana Pembangunan Jangka Menengah Nasional/RPJMN*) from 2004 to 2009 and 2010 to 2014 (BAPPENAS, 2014b).

Table 5.2. Milestones of Disaster Regulatory Framework (2004 – 2014)

Year	Key regulations
2004	Disaster-Related Law: Law 25/2004 on National Development Planning System
2007	- Disaster Regulation: Law 24/2007 on Disaster Management (DM) - Disaster-Related Law: Law 26/2007 on Spatial Planning; Law 27/2007 on the Management of Coastal Areas and Small Islands
2008	- Government Regulations (i.e. Peraturan Pemerintah/PP) 21/2008 on Disaster Management (DM); PP 22/2008 on DM financing and aid assistance; and PP 23/2008 on DM External Supports (International Agency and Non- Governmental Agency) - Presidential Regulation (i.e. Perpres) 8/2008 on the establishment of National Disaster Management Agency (known as BNPB) - Regulation of Minister of Home Affairs 46/2008, (i.e. Permendagri) on Organizational and Management of Local Disaster Management Agency (i.e. BPBD) - Regulation of the Head of BNPB 3/2008, (i.e. Perka BNPB) on the establishment of Local Disaster Management Agency (i.e. BPBD) - And many other Regulations of the Head of BNPB/Minister
2009	- Disaster-Related Law: Law 31/2009 on Meteorology, Climatology and Geophysics; Law 32/2009 on the Protection and Environmental Management
2014	- Disaster-Related Law: Law 23/2014 on the Regional Government; Law 6/2014 on Village

The next sub-sections set out to analyse these regulations in detail, particularly disaster regulations and other supporting ones. The key findings are that Law 24/2007 has some confusing components, especially in terms of disaster status, budget allocation and cooperation between regions as well as vulnerable groups. In addition to this, the analysis highlights the importance of integrated spatial data and regulations, as well as harmonious cooperation between various ministries, especially involving the

Geospatial Information Agency (*Badan Informasi Geospasial/BIG*) and National Bureau for Statistics (*Badan Pusat Statistik/BPS*).

5.3.1 Key Issues in Indonesia's Disaster Regulatory Framework

Law 24/2007 includes some unclear, ambiguous and confusing contents (BAPPENAS, 2008; UNDP, 2008b). It is unclear in what way an 'occurrence' can be interpreted as a disaster and then categorized as a national, provincial or local disaster. Therefore, more clarity is needed with regard to 1) the size of an occurrence that can be categorized as a disaster; 2) the region's ability to deal with the impact of the disaster; 3) the number of people affected; and 4) the extent to which a fair and objective decision will avoid hidden interests.

The 'status' is directly related to the resources made available to address the destructive impacts of a disaster, and has implications for whether to use the funds from the state budget, local budget and/or from any additional resources. As a consequence, if the status has not been well defined by the law, the government could spend money arbitrarily or might not issue a budget at all. In addition, although according to Article 60 of Law 24/2007 the GoI and local governments should allocate disaster management funds adequately, and according to Article 4 of the Government Regulation 22/2008 there should be budget sharing between GoI and the local governments (Goverment of Indonesia, 2008b), the law does not oblige them to execute the budget. As a result, many local governments do not consider it necessary to allocate a budget for disaster management.

Importantly, budgets should be in line with development plans; however, the law does not stipulate that the disaster plan should be integrated with national and local development plans. Furthermore, no explicit responsibility is placed on the GoI and local governments to set up a joint management plan with other related parties. Although Government Regulation 21/2008 has identified the possibility of involving various stakeholders (Goverment of Indonesia, 2008a) – for instance, in preparing the national action plan – the GoI does not specify a mechanism to engage relevant stakeholders and ensure community participation. In addition, there are no special regulations for vulnerable groups, such as people with special physical or psychological needs, women, children, the elderly, the indigenous population, refugees and migrants, persons with disabilities, minorities and people with language barriers.

In addition to this, there is a lack of clarity about the ways in which regions ought to cooperate in achieving effective collaborative governance around disasters. The government's regulation offers no information or guidance on how these regions should work, coordinate, or cooperate with nearby regions during an emergency response, especially in the case of unavailable and inadequate human resources, equipment, and logistics in the specific province/regency/city, or how local governments in the affected regions may request assistance from other local regions nearby.

5.3.2 Interconnecting Regulations in Indonesia Disaster Governance

Law 27/2007 on the Management of Coastal Areas and Small Islands explains disaster mitigation in legal terms (Goverment of Indonesia, 2007b). However, the role of the GoI and local governments in implementing programmes of disaster mitigation in coastal areas and small islands has not yet been detailed. Similarly, Law 32/2009 on Protection and Environmental Management fails to encourage the integration of environmental protection plans into a disaster management plan (Goverment of Indonesia, 2009). Although there have been initiatives to synchronize coastal and environmental risk management with disaster management, the fact remains that, up until now, climate change adaptation (CCA) and disaster risk reduction (DRR) have been used as separate tools in managing risk. The push for integration is designed to avoid budget inefficiencies due to the duplication of activities, and to ensure the effective use of human resources and technology. In addition, it is expected to drive interconnected actions at the local and community levels in order to achieve the Sustainable Development Goals (SDGs) targets (BAPPENAS, 2015a; KLHK, 2015; Widjaja, 2015).

The unavailability of appropriate large-scale maps is seen to be the reason for local government's inability to obtain specific hazard maps and/or a zoning plan for coastal areas and small islands. Law 25/2004 on the National Development Planning System has mandated that planning should be based on data and information that is accurate and reliable, including geospatial data and information (Goverment of Indonesia, 2004). In addition, Law 26/2007 on Spatial Planning has mandated the need for geospatial data and information in formulating a spatial plan, whether national, provincial or for regencies/cities (Goverment of Indonesia, 2007a). Accordingly, the spatial plan (*Rencana Tata Ruang/RTR*) should be aligned with the rules of other sectors and vice versa. Hitherto, RTR has not been consistently used as a guideline for

the development of sectoral and regional development plans. As a result, land use arrangements and their control may not be carried out effectively.

The aforementioned issues indicate the importance of harmonious cooperation between various ministries and the Geospatial Information Agency (BIG). Although Law 4/2011 on Geospatial Information describes the essential role of geospatial information in managing natural resources as well as disaster management in the territory of the Republic of Indonesia, there must be a strict command from the GoI to refer to the same source maps and an appropriate scale for development (Goverment of Indonesia, 2011). The same principle should also be applied to statistical data from the National Bureau for Statistics (BPS).

5.4 Disaster Governance Institutional Network

Disaster policy change in Indonesia was driven by a hybrid process of local and international interaction (Lassa, J., 2013). Furthermore, the political atmosphere following the enactment of Law 22/1999 (especially in terms of decentralization and local autonomy) also influenced the decision of the GoI to devolve more responsibility to the regions in managing various issues (including disasters) within their jurisdiction (Kusumasari and Alam, 2012a). Moreover, the governance trends in Indonesia have evolved towards a more fluid cooperation with non-governmental actors, resulting in national government no longer being recognized as the hegemonic power in the process of disaster governance and policy-making.

Historically, the institutional arrangements for disasters prior to 2008 were less focused on DRR issues due to their ad-hoc organizational character, which was suited more to ‘reactive’ than ‘preventive’ or even ‘proactive’ in their responses (Lassa, J., 2013). The rehabilitation and reconstruction process following the Aceh Tsunami (through the establishment of BRR Aceh-Nias) is a case in point (see also Sub Sections 5.2.3 and 5.5.2). At that time, the GoI was responsible for determining whether it was necessary (or not) to establish a special agency addressing the post-disaster recovery process (Kusumasari and Alam, 2012a).

However nowadays, supported by the United Nations Office for Disaster Risk Reduction at the request of the United Nations General Assembly, the Sendai DRR Framework (SFDRR) was ratified on March 18, 2015 by more than 100 countries. This aims for the following results: ‘The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental

assets of persons, businesses, communities and countries' (SFDRR, UNISDR, 2015, p. 12). The Sendai Framework is a 15-year period, voluntary and non-binding agreement that recognizes that states have a key role to reduce disaster risk but those responsibilities must be shared with other stakeholders including local governments, the private sector and other stakeholders. The priorities focus on disaster risk reduction, as follows:

Priority 1. 'Understanding disaster risk'. In this case, the policies and practices must be based on a comprehensive understanding of all relevant elements of disaster risk reduction;

Priority 2. 'Strengthening disaster risk governance to manage disaster risk'. The emphasis of this priority is on the vision, plans, guidelines and coordination framework between stakeholders, both at local, national and global levels;

Priority 3. 'Investing in disaster risk reduction for resilience'. In this case, the focus on the collaboration of public and private investment, can be both in the form of structural and non-structural measures, in aspects but not limited to: economic, social, health and culture;

Priority 4. 'Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction'. This priority implicitly states the importance of identifying preparedness and recovery governance that is relatively effective to be applied at all levels. In addition to this the recovery phase is understood as the critical opportunity to 'Build Back Better', including integrating them into development plans.

The following analysis in principle has elaborated on the values contained in the SFDRR, where the Government of Indonesia has mapped this into the National Medium-Term Development Plan (RPJMN) 2015-2019 along with related actors. This can be observed in the following sub-sections, which further analyse the institutional aspects at the national level, through national policy-based institutional network analysis, and at the sub-national level by examining the local institutional framework.

The key findings are that at the national level, BNPB remains the core actor among other key players due to its mandate to coordinate the implementation of disaster management policies in Indonesia. The main actors at the local level for disseminating, coordinating, and implementing the disaster-related agenda, including the DRR agenda

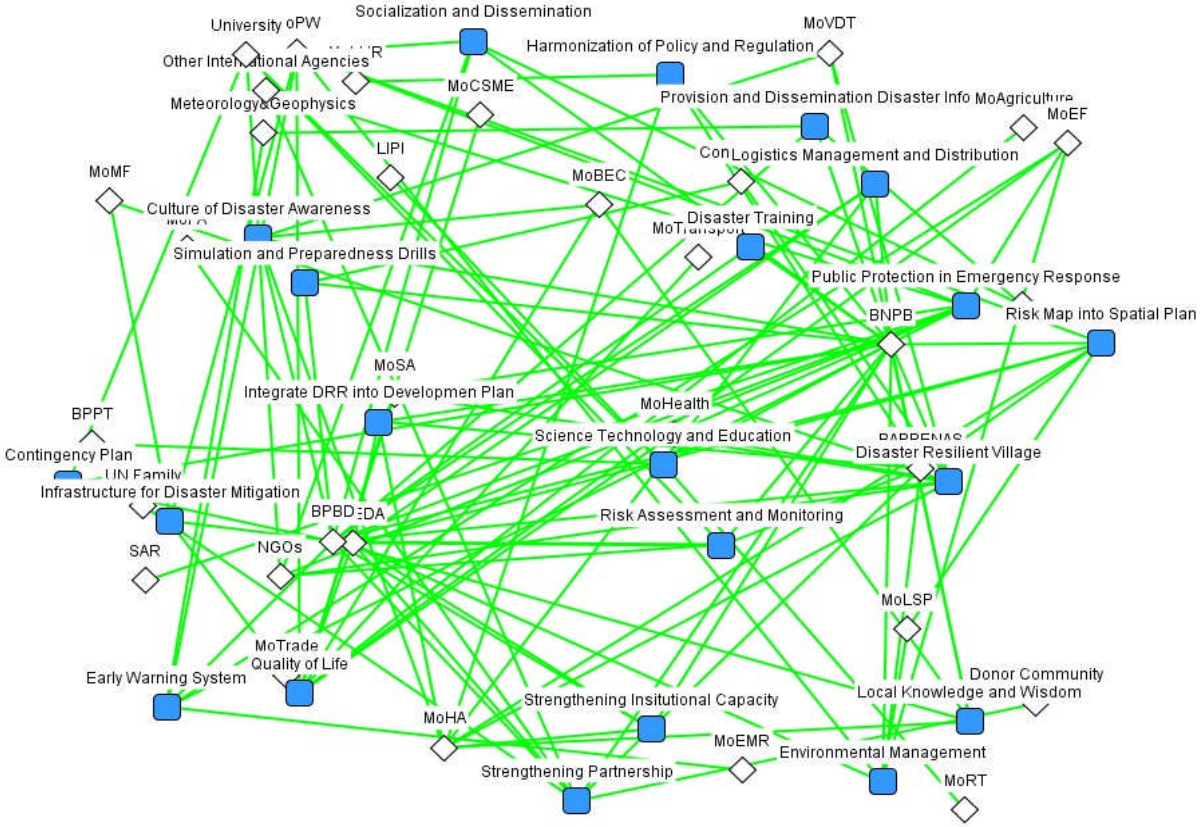
and the post-disaster recovery targets, are BPBDs and BAPPEDAs. Both these actors are operating at the frontline of concerted efforts to integrate the DRR and community resilience agenda into regional development policy. Non-governmental actors, such as universities, NGOs and a few international agencies, also play an important role in translating government policy into practice at the community level.

5.4.1 National Policy-Based Institutional Network

In accordance with the National Medium-Term Development Plan (RPJMN) 2015-2019 (Goverment of Indonesia, 2015), the disaster management programme is no longer classified as a development priority. Instead, it is the supporting policy for the seventh priority of the Jokowi President in ´Nawa Cita´, which is to create economic independence through environment and disaster management investment in an effort to protect the sustainability of strategic sectors of the domestic economy (Soetiarso et al., 2014).

With the target to reduce disaster risk in growth centres at high and medium risk, as per the Indonesian Disaster Risk Index (IRBI) (BNPB, 2013), the GoI set up the following strategies for disaster management policy: 1) integrating DRR within the sustainable development framework at national and local levels (five sub-strategies); 2) reducing vulnerability to disasters (eight sub-strategies); and 3) strengthening the capacity of central government, local government and communities (eight sub-strategies). The focus of RPJMN 2015-2019 lies on the 136 regencies/cities which are located in an economic growth area, consisting of 120 regencies/cities with a high index of risk, and 16 regencies/cities with a moderate risk level. The spatial distribution of those 136 regencies/cities is as follows: Papua (10 regencies/cities), Jawa-Bali (36), Kalimantan (18), Maluku (12), Nusa Tenggara (15), Sulawesi (24), and Sumatra (21).

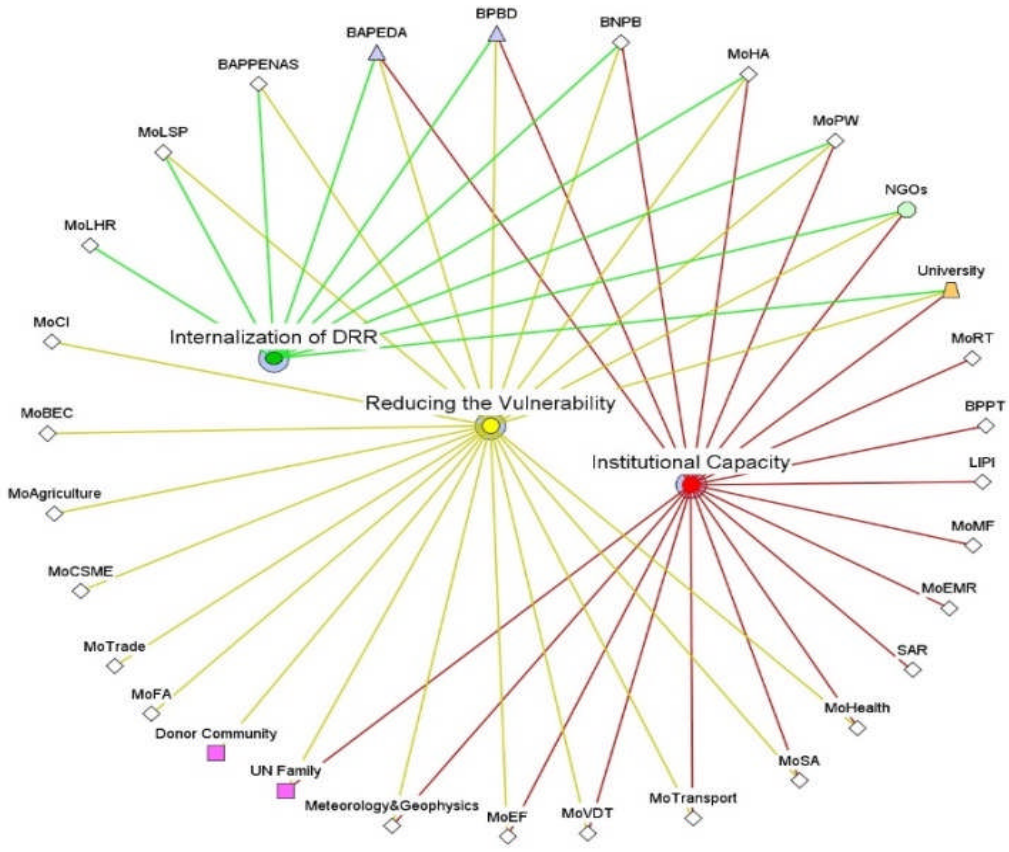
Figure 5.1. The National Policy-Based Network (Based on the Sub-Strategies)[14]



[14] The national policy refers to the DRR Policies in Presidential Regulation 2/2015 on RPJMN 2015-2019 (National Medium-Term Development Plan), and is complemented by interviews with some actors from the national level.

Figure 5.1 shows the network map of the key actors based on the sub-strategies at the national level. More than 20 ministries/agencies, as well as local governments, universities, NGOs and the donor community, are connected in support of the disaster management agenda, which represents 90 percent of actors with a disaster management agenda. After classifying sub-strategies into main strategies, Figure 5.2 clearly highlights the seven key players in governing the disaster and DRR-related agenda: BNPB, the Ministry of Home Affairs/MoHA (*Kementerian Dalam Negeri/Kemendagri*), the Ministry of Public Work and Housing/MoPW (*Kementerian Pekerjaan Umum dan Perumahan Rakyat/KemenPUPera*), BPBDs, BAPPEDAs (i.e. Local Development Planning Agency), NGOs and universities.

Figure 5.2. The National Policy-Based Network for the Disaster-related Agenda



BNPB remains the core actor among the other key players due to its role in coordinating the implementation of disaster management policies in Indonesia. Nevertheless, collaborative governance is compulsory for the disaster and DRR-related agenda (BNPB, 2016), as illustrated by the following: the BNPB budget capacity in 2013 was 1,045 billion Rupiah, but after collaborating with more than 30 line ministries and

agencies, the budget for disaster management reached 9,500 billion Rupiah (Widjaja, 2014, p. 11). In addition to this, the DRR strategy should also reflect the priorities and perspectives salient to regional development, ensuring that there is cooperation between the regions in managing common risk and maintaining local and national development goals (Soetiarso et al., 2014; INT1, documented in BAPPENAS, 2015b).

However, from the network analysis, the low level of coordination between BNPB and the Ministry of Environment and Forestry/MoEF (*Kementerian Lingkungan Hidup dan Kehutanan/KLHK*) is glaringly evident. Based on strategies in RPJMN 2015-2019, MoEF involvement was only mentioned in the strategy for 'reducing vulnerability' and building 'institutional capacity', although in fact the responsibility to integrate CCA and DRR lies within both organizations, BNPB and MoEF, as well as with the network, particularly with regard to mainstreaming the concept into the formal development strategies and practices, and cascading it from national to local level. The interviews revealed that the formal engagement between BNPB and the National Council for Climate Change (*Dewan Nasional Perubahan Iklim/DNPI)*, which was initiated by MoEF, was seen to be insufficient and ineffective for the purpose of performing a coordinating role (INT2, documented in BNPB, 2016). For instance, the BNPB is not a formal member of the DNPI Adaptation Group, while DNPI is also not part of the National Platform for DRR (Djalante, R., 2013).

In addition to this, wider use of the formal data published by the Geospatial Information Agency (CNNIndonesia, 2015) and National Bureau for Statistics (Antaranews, 2008; Gatranews, 2016) should be encouraged, though there has been a collaboration network concerning data with the Agency for Meteorology and Geophysics. This is in line with the presidential directives given to all line ministries and other government offices during many cabinet sessions. Unless there is an issue of insufficient or unavailable data, this rule also applies to the Indonesian Institute of Sciences (*Lembaga Ilmu Pengetahuan Indonesia/LIPI*), the Agency for the Assessment and Application of Technology (*Badan Pengkajian dan Penerapan Teknologi/BPPT*) and university research activities.

At the meso level, the actors that function as a bridge and can work directly at the grassroots level are universities, NGOs and a few international agencies (Djalante, R., 2013; INT3, documented in BAPPENAS, 2015b). They are more flexible with regard to the budget and the types of activities (INT4, documented in Dompet Dhuafa, 2015; INT5, documented in Mercy Corps, 2016), the implication being that they can better

adapt to the inherent uncertainties associated with disaster management (Djalante, R., 2013) and directly partner up with the community. However, these actors may or may not have a similar agenda to the national agenda. In fact, some of them have been working towards goals beyond the GoI development framework (INT6, documented in BAPPENAS, 2015b; INT2, documented in BNPB, 2016). Importantly, the international agencies and NGOs, both at a local and international level, have played a critical role in initiating new global concepts, such as Climate Change Adaptation (CCA) and DRR integration, and community-based DRR, and have successfully integrated and implemented them through projects at the local level (Djalante, R., 2013; INT5, documented in Mercy Corps, 2016).

Apart from the aforementioned non-governmental actors, the national platform for DRR (*Platform Nasional untuk Pengurangan Risiko Bencana/Planas PRB*) has also been a useful forum for integrating insights, aspirations and interests as well as bringing together the various stakeholders of DRR in Indonesia (INT2, documented in BNPB, 2016). In addition to this, government officers, professionals, NGOs and academics have also been connected under the auspices of the Indonesia Disaster Experts Association (*Ikatan Ahli Kebencanaan Indonesia/IABI*), enabling them to exchange ideas and build understanding in order to translate GoI policies into practice or propose new knowledge-based policy. Moreover, both have significantly contributed to facilitating the annual gathering of DRR stakeholders at two national events – the 'Commemoration of DRR' and the 'Indonesian Disaster Expert Conference' – where disaster-related issues are discussed in depth.

5.4.2 Local Institutional Framework

At the local framework, the main actors are BPBDs and BAPPEDAs. Nevertheless, implementation still requires the coordination and support from other agencies acting within their jurisdiction. The next explanation discusses in more detail the BPBD´s role as a core actor at the sub-national level.

In 2015, the majority of BPBDs (90 percent) at regency/city level were established and operationalized (BAPPENAS, 2015c). The next challenge is to strengthen the BPBDs with regard to their duties and responsibilities in relation to two regulations: namely, the Regulation of the Minister of Home Affairs 46/2008 and The Regulation of the Head of BNPB 3/2008. The BPBDs have three functions: coordination, command and control. Coordination is based on the Head of BNPB Decree 3/2008, which directs the

collaboration between other line ministries or other government offices, as well as the cooperation between other countries, both in emergency response and post-disaster. The command function relates to the status of disaster emergencies. Lastly, the control function focuses on the use of technology, which might pose a risk or potentially become a hazard, and/or for controlling the exploitation of natural resources, which might gradually endanger humans and the environment (Goverment of Indonesia, 2012).

While all provincial BPBDs produced a provincial Disaster Management Plan in 2012, only about 15 percent of BPBDs at regency/city level had prepared a Disaster Management Plan for their respective regency/city (BAPPENAS, 2015c). The role of a Disaster Management Plan is important not only in signalling commitment by local governments to carry out systematic and comprehensive disaster management, but also in preparing for the possibility of future disaster occurrence. Lack of a budget for disaster management practices also poses considerable challenges (Kusumasari and Alam, 2012a; INT7, documented in BPBD Bantul Regency, 2015). Low budget allocation may lead to chronic and systemic problems, especially for regions exposed to hazards on a regular basis, such as Jakarta's floods. In Jakarta's case, although the Disaster Management Plan has been integrated into the RPJMD and an annual development programme (i.e. RKA-T), it was noted that the BPBD of Jakarta had only set a minimum target for budget allocation, representing about 1 percent of the total provincial budget plan for every fiscal year (Intarti et al., 2013, p. 18).

In addition to budgeting issues, the enabling mechanism for grassroots participation is worth exploring further. There needs to be a greater focus on policies that facilitate the reduction of vulnerability and risk at the community level through active participation (Hadi, 2014; INT8, documented in Local People, 2015). This could be achieved through educational and training programmes in schools or at the village level, which could help to increase the communities' capacity to deal with disasters, and turn them into disaster resilient villages (INT9, documented in The Ministry of Village Disadvantaged Regions and Transmigration, 2015).

5.5 Disaster Recovery Governance: Regulatory Framework and Implementations

In Indonesia, the recovery process does not always follow the textbook standard. Some stages of a strategy or activities may be skipped, or be invisible, as a result of the

overlapping processes. The variety of the recovery processes is highly dependent on the magnitude and impact of disasters. As set out by Law 24/2007 on Disaster Management, recovery is defined as a series of activities seeking to restore the conditions of affected communities and the environment by re-building institutions, infrastructure and facilities for conducting rehabilitation (Government of Indonesia, 2007).

The following sub-sections further investigate the legal basis of disaster recovery regulations in Indonesia, thus laying the ground for the comparative analysis coming up in Sub-section 5.2 and the further analysis in subsequent chapters. The key findings are that the majority of respondents and official documents recognise the case of Bantul-Yogyakarta as an example of the fastest precedent of disaster recovery, in comparison to other selected cases. Accordingly, the next two chapters (Chapters 6 and 7) set out to explore the Bantul recovery in depth.

5.5.1 Disaster Recovery Regulations in Indonesia

Recovery is a very contextual, dynamic and non-linear process (Olshansky et al., 2012). Nevertheless, the recovery process based on regulations in Indonesia can be summarized as follows. The recovery process begins with an early recovery, which is a multi-dimensional process sequence that begins in the aftermath of a crisis aimed at restoring stable and normal conditions.[15] In general, the early recovery stage is intended to (1) strengthen the ongoing emergency response and foster the independence of affected communities; (2) promote disaster recovery initiatives by affected communities; and (3) serve as transition from the emergency response period to the subsequent recovery phase (e.g. rehabilitation and reconstruction, etc.).

Early recovery is not a part of humanitarian activities, so the initial recovery activities related to the efforts of strengthening the emergency response and fostering community self-sufficiency include, but are not limited to, the following:

— The provision of basic services, including health services, sanitation and basic environmental assets, such as roads and transport
— The provision of appropriate transitional shelters
— The normalization of livelihoods, for example by providing temporary jobs for cash-for-work communities

[15] Bureau for Crises Prevention and Recovery United Nations Development Programme, February 2009

— Keeping the environment clean and conditioning the environment for the people to be able to return to their previous livelihoods/jobs
— Performing basic governance functions
— Maintaining security and law enforcement
— Maintaining social conditions, so that order can be achieved and further risks, such as conflicts, can be minimized

To promote community-based recovery initiatives, activities are aimed at: making room for community involvement in the recovery planning and programming; encouraging local knowledge and practices; and the development of community-based recovery approaches; as well as building strategic alliances between communities and local government. It is necessary, however, to ensure that these activities do not create discriminatory or secondary risk practices by identifying mechanisms of mitigation that have negative or adverse effects.

In an effort to ensure a smooth transition from the emergency response period to the next stage of the recovery process, the activities are aimed at assessing initial needs, as well as planning and mobilizing resources for recovery by taking into account community needs, resources and vulnerabilities. Also at this stage, it is advisable to first, reinforce the local system in order to restore government capacity to lead and manage the next stage of development, and subsequently, identify and cultivate a system with clear stakeholder roles and responsibilities that facilitate the integration of recovery in the development process.

Entering the rehabilitation and reconstruction phase, as set out in Law 24/2007 Article 57 (Government of Indonesia, 2007), the recovery seeks to meet medium- and long-term goals by tailoring activities to the post-disaster conditions and to accelerate the recovery. Rehabilitation is the restoration to a sufficient level of all aspects of public or community services in post-disaster areas, with the primary objectives being normalization and the proper running of all aspects of governance and community life. In the same vein, reconstruction is the rebuilding of all infrastructure, facilities, and institutions in post-disaster areas, both at the governmental and community levels, with the main target being growth and development of economic, social and cultural activities, the establishment of law and order, and active community participation.

According to Article 56, Government Regulation 21/2008 on Disaster Management (Goverment of Indonesia, 2008a), the scope of rehabilitation embraces a number of

activities: improving the disaster area environment, including the restoration of public facilities and infrastructure; providing assistance to enable the reconstruction of community houses; facilitating social psychological recovery; providing health services; driving reconciliation and conflict resolution; stimulating social, economic and cultural recovery; securing the restoration of security and order; and normalising government functions. Furthermore, as set out by the Regulation of the Head BNPB 17/2010 on General Guidelines for the Implementation of Post-Disaster Reconstruction and Rehabilitation (Indonesia, 2010), the implementation of reconstruction and rehabilitation generally requires:

1. *Planning*
   - The implementation of reconstruction and rehabilitation requires a planning document, called the action plan for reconstruction and rehabilitation, covering a maximum period of three years.
   - The preparation of action plans for reconstruction and rehabilitation is carried out at the end of the emergency response period and the early recovery period by taking into account the results of the post-disaster needs assessment, local priorities, resource allocations, and the implementation time.
   - The reconstruction and rehabilitation action plan consists of national, provincial, and regency/city reconstruction and rehabilitation action plans.
   - The content of the reconstruction and rehabilitation action plan covers aspects relating to human development, housing and settlements, infrastructure, economy, social and cross-sectoral issues.

2. *Budgeting*
   - The key funding resources for the implementation of reconstruction and rehabilitation are regency/city budgets for disasters at the regency/city level, provincial budgets for disasters at the provincial level, and state budgets for disasters at the national level.
   - Other funding resources, such as insurance, international participation (including donor community funds), trust funds, and other community aid funds
   - Regency/city governments may request assistance from provincial and central government with financing reconstruction and rehabilitation.

3. *Institutions*

— The institutions responsible for rehabilitation and reconstruction include the BNPB at the national level and/or provincial/regency/city level, and the BPBD at the regional level.
— The establishment of an ad hoc coordinating body will be determined on the basis of the scale of the disaster and its impact.

4. *Implementation*

— The substantial technical implementation shall be led by local government units (i.e. SKPD) in the province/regency/city.
— The technical implementation personnel for rehabilitation and reconstruction preferably shall be recruited from the pool of professionals hailing from the disaster area.
— International agencies, international non-governmental institutions and non-governmental organizations involved in reconstruction and rehabilitation shall coordinate officially with the BNPB and its staff.

5. *Monitoring and Evaluation*

— The BNPB and BPBD coordinate the implementation of monitoring and evaluation activities.
— The monitoring and evaluation activities must link back, and add value, to the document of action and the goals of regional and national development.

The most urgent needs to be met during the early recovery process revolve around housing and livelihoods (Mercy Corps Indonesia, 2014). During the early recovery period, there will be a demand for the provision of housing in the form of transitional shelters – not an emergency shelter – followed by the provision of permanent housing. Subsequently, there will be a demand for the recovery of livelihoods, and then for the recovery of economic aspects. Finally, at its advanced stage, the recovery strategy focuses on re-vitalising economic community activities and institutions within the area of disaster. These activities and economic institutions include the production, distribution and consumption of economic goods. In principle, the economic recovery activities are aimed at reviving those economic activities that existed before the disaster. The simplest indicator of economic recovery is the level of production and distribution activities of economically valuable goods, the occurrence of economic transactions both in the market and beyond the market, an increase in production and

distribution, and the number of community members and economic institutions involved in such production and distribution activities.

Based on various disaster-related studies published in international journals, Jordan and Javernick-Will (2012) have classified some of the most widely used indicators for measuring recovery processes. In assessing the economic aspects, the three main indicators are the number of businesses (8.91 percent), employment (7.92 percent), and income level (7.43 percent). With regard to gauging supporting aspects, such as infrastructure, the key indicators include housing (19.31 percent), supporting facilities (18.32 percent) and transportation (11.88 percent). Housing is the most widely used indicator to measure recovery due to the ease of obtaining and measuring data.

At the annual event of the disaster risk reduction commemoration in 2015, the BNPB presented and disseminated a policy study on the formulation of the Post-Disaster Recovery Index (called INA-PDRI). INA-PDRI is an evaluation tool for post-disaster rehabilitation and reconstruction implementation, which robustly measures and assesses the implementation of rehabilitation and reconstruction programmes and activities. In gauging the economic development, the selected indicators include (1) the productive economy of households indicated by purchasing power parity (PPP); (2) the regional economy indicated by gross regional domestic product (GRDP) per capita; (3) employment, indicated by the labour force participation rate (LFPR) and unemployment rate; and (4) poverty, which is appraised by counting the number of people living below the poverty line. The complete range of aspects and indicators for the preparation of disaster recovery indices, as prepared by the government, can be found in Appendix G. However, not all indicators in the appendix are used in the INA-PDRI index. The guiding principle in compiling the INA-PDRI composite index is simplicity and measurability, in other words it must be easy and quick to measure, as well as low cost in the implementation.

Another way to measure the recovery of disaster-affected communities is through a longitudinal study, which collects periodic information on households and communities in disaster-affected areas – as first mandated by Presidential Decree 16/2011 on the Action Plan for Rehabilitation and Reconstruction after the eruption of Mount Merapi. This longitudinal study undertaken at the request of the national government, and supported by the United Nations Development Program (UNDP), uses welfare indicators, such as income, expenditure, asset ownership, basic services, nutrition, health, education, but also other indicators measuring additional outcomes ranging

from community resilience to disasters. In contrast to previous methods, which use existing government data published by the Central Bureau of Statistics (BPS), the longitudinal study gathers its own primary data through surveys.

In addition to the need for monitoring and evaluating the progress of disaster recovery implementation, regular surveys can be conducted to capture the changes in the dynamic short-term and long-term impacts of disaster recovery on communities and their livelihood. Moreover, if data is collected on a regular basis, it will make it easier for the government to implement the recovery programme in an informed and responsive manner, and/or to re-plan with flexibility and promptness as needed.

5.5.2 The Comparison of Disaster Recovery Cases in Indonesia

A series of catastrophic events in various parts of Indonesia, especially those occurring over the last decade from the end of 2004 up until 2015, have taught the Indonesian Government valuable lessons in identifying best practices and effective mechanisms for disaster governance and recovery. While each region had its own approach, the most noticeable recovery processes are those of the post-earthquake and tsunami recovery of Aceh-Nias (2004), and the post-earthquake recovery of Yogyakarta (2006), West Sumatra (2009), and West Java (2009).

Following the catastrophic earthquake and tsunami, Aceh and Nias suffered massive destruction that required cross-sectoral contributions to ensure post-disaster recovery. Fourteen regencies on the Western and Eastern coasts of Aceh were utterly devastated, including wrecked houses, buildings and physical infrastructure. The disasters not only caused the deaths of hundreds of thousands of people, but also paralysed the local government system for a certain period of time. This massive impact gave rise to the government's policy of establishing the Rehabilitation and Reconstruction Agency (BRR) as an ad-hoc institution with 'special' authority to implement rehabilitation and reconstruction (BAPPENAS, 2010). Formed as a ministry-like agency, BRR covers a broad range of responsibilities with considerable powers to coordinate other strategic partners or ministries, including coordinating the work of donor agencies and NGOs. In other words, BRR is able to stand in as a 'temporary government' that operates with reference to the Master Plan for Regional Rehabilitation and Reconstruction prepared by the central government.

In Aceh's tsunami recovery phases, the rehabilitation and reconstruction process took about five years to meet the housing needs of the majority of the survivors; and even

longer to improve the region's socio-economic conditions. In December 2008, four years after the disaster, it was only possible to register land ownerships for 211,839 land tenures out of the targeted 600,000 land formalizations. The efforts of the Aceh and Nias post-tsunami recovery correlated with the magnitude of the estimated losses. Aceh's tsunami damaged 20,000 hectares of coastal fish cultivation, destroyed 60,000 hectares of agricultural land, and disrupted the operations of 100,000 small and medium enterprises and businesses. In addition to direct livelihood losses, such as damaged fishing boats, many livelihoods were also indirectly affected through the destruction of the fragile coastal ecosystem.

According to the Tsunami Rehabilitation and Reconstruction Report, the economic recovery programme was implemented in various sectors over the course of three years (2005-2008): agriculture, stockbreeding, plantation, fishery, forestry and environment, as well as trade and employment. In the trade sector, cooperatives and MSMEs received revolving capital for wholesale, market traders and traditional markets; cooperatives and MSMEs were empowered through micro-finance institutions (MFIs) in each sub-district; Aceh and Nias MFIs were strengthened; MFIs received training; cooperatives were developed; and potential areas and stimulant investment were promoted. Meanwhile, in the employment sector, the programme ensured the provision of employee training, labour training, and business support facilities.

In contrast, in Yogyakarta and Central Java, the impacts of the earthquake were not severe enough to paralyse the local governments. Therefore, the respective local governments were able to manage and oversee interventions around rehabilitation and reconstruction. Here, the government positioned itself as a director and supervisor, and took credit for promoting self-reliance rooted in local wisdom. With the Yogyakarta earthquake disaster, the GoI divided the recovery into two parts: long term and short term. The short-term interventions were implemented in the immediate aftermath of the disaster, with the aim of stabilizing the lives of those affected and preparing the area for re-establishing living conditions following the disaster. The long-term interventions referred to the efforts of rehabilitating and rebuilding housing, culture and economy (Tim Teknis Nasional, 2007).

Bantul Regency in Yogyakarta Province became the regency most severely damaged, followed by Klaten Regency in Central Java Province. However, the high level of community engagement resulted in accelerated post-earthquake recovery in both areas. Encouraging self-reliance and the use of local wisdom, local governments

successfully provided opportunities for citizens to reconstruct their houses and restore village facilities. In this case, the role of government is to facilitate the process in financial, technical and supervision terms (BAPPENAS, 2010). The self-managed housing reconstruction projects not only aimed to help communities empower themselves economically, but also triggered the re-emergence of social capital, called 'gotong-royong'.

In addition to addressing housing and settlement rehabilitation, the general policies for disaster recovery following the Yogyakarta earthquake also included the restoration of public facilities and infrastructure, and the revitalization of livelihoods and regional economies. The recovery of the public facilities and infrastructure aimed to restore the function of community services, which in turn supported the revitalization of social life and economic activity. The revitalization of livelihood and regional economies subsequently worked to revive the local economic activities that enabled the generation of income for community members.

The earthquake recovery assessment in West Java Province offers another insightful case study (Sunarti, 2013). The findings indicate that the disaster caused long-term economic disruption for families, and ultimately also disrupted the function of the family as an institution itself. This is mainly because the support for economic resources at the level of families is very limited. Moreover, there were not many other options existed in terms of possible income sources, since the livelihoods in the affected areas were not diverse. Most people still depend on the primary sector that has not yet developed added value. Drawing on data provided by 500 families in the four regencies (Bandung, Ciamis, Garut and Tasikmalaya) that were most severely damaged on 2 September 2009 (Sunarti, 2013, p. 7), analysis found that psychosocial problems linked to the economy and food security as well as family relations and communities were still unsolved up to a year after the disaster.

In order to address the psychosocial problems, a programme was launched to provide a stimulant to foster togetherness and mutual cooperation (i.e. gotong-royong). The activities funded through this programme included, among others, activities to improve public facilities and environmental sanitation. In addition, the programme also included activities around livelihood recovery assistance, such as training, condition mapping and needs analysis, business clinics (i.e. management, production techniques and inputs) and evaluation of successes. Performance indicators were focused on measuring the improvement of business productivity, management outputs/outcomes

(i.e. company profile, organizational structure and work procedures), and capabilities in online (website) marketing and employment. The most valuable lesson from the West Java earthquake is the importance of relying on the key sectors of the affected area, which in the context of West Java Province included agriculture, rural industries and services and trade.

Lastly is the 2009 earthquake in West Sumatra Province. In the aftermath of the disaster, the Province prioritised the recovery of social, economic and productive economic activities, and focused on the restoration of basic public services and meeting the needs of poor and vulnerable groups. The productive economic sector was rebuilt by re-energising the sub-sectors of cooperatives, industry and SME, agriculture (food crops), marine and fishery, stockbreeding and plantation. Three of the programmes related to the sub-sectors of cooperatives, industries and MSMEs: MSME capital assistance, market development and a temporary place of business. A total of 2000 MSMEs in seven regencies received capital assistance, which was distributed through groups stipulated by the Head of Regency's decree.

According to a recent study in Indonesia, social vulnerability is influenced by socioeconomic status (Siagian et al., 2014). Cutter and Emrich (2006, as cited in Siagian et al., 2014) defined social vulnerability as the (pre-existing) incapability of a community to bounce back, to be resilient and to recover from the impact of a disaster. As seen in various cases of disaster recovery, the impacts of disasters can be worsened by the (existing) poverty conditions, which may become a great barrier to the long-term recovery process. In other words, the combination of multi-hazard exposure and social-economic vulnerability has considerable potential to hamper the pace of development (Sunarti, 2013; Siagian et al., 2014).

Nevertheless, among the above mentioned cases, the recovery of Bantul Regency post the Yogyakarta earthquake in 2006 is considered to be 'the quickest post-disaster recovery in the world' (Development Advisor for the Governor of Yogyakarta, as cited in International Organization for Migration, 2011, p. 7). The handicraft production sector was one of the sectors most severely affected by the 2006 earthquake; however, most of these sectors have now recovered and new businesses continue to grow (Sekretariat JRF, 2011). In addition, other economic sectors are significantly improving, such as agriculture, manufacturing and industry, trade and the service industry. Based on data of GDP growth in 2010, 2011 and 2012, it can be seen that Bantul's economic conditions have been relatively stable. The GDP growth rate of Bantul Regency in 2010

(based on constant price) was 4.97 percent, 5.27 percent in 2011, and 5.34 percent in 2012 (BPS Bantul Regency, 2017).

The former head of Bantul Regency was successful in leading the recovery of the Regency following the disaster (Kusumasari, 2014a), especially considering that the recovery progressed smoothly as a result of social capital interacting with leadership effectiveness (Sunarti et al., 2013). Furthermore, disaster management in Indonesia was said to be faster and more effective than in China or even in the United States. This finding was presented by Prof. Anthony Saich, Director of the Ash Center for Democratic Governance and Innovation, Harvard University, within a discussion entitled, 'Leadership in Disaster Management, seeking formulation for Indonesia' organized by the Office of Special Staff of the President for Social Assistance and Disaster Relief (Goverment of Indonesia, 2010, p. 27). In addition to this, according to respondents (INT10, as documented in BAPPENAS, 2015b) the recovery in Bantul provides an insightful case study to be explored, both for its good practices as well as its bad ones, as explained by the respondent:

> *In the context of Yogyakarta's recovery, housing development is very fast, approximately two years. This is allegedly due to the implementation of community-based disaster recovery, where local governments become the driving organization with the direction of central government assistance*

For that reason, the next two chapters (Chapter 6 and 7) are focused on examining the processes underlying the aforementioned Bantul – Yogyakarta recovery case.

5.6 Concluding Remarks

This chapter's findings, using the mixed methods of RegMAP, DNA and comparative analysis, can be summarized as follows:

First, collaborative governance emphasizes the inter-organizational arrangements across the boundaries of organizations and institutions, which are aimed at pursuing common goals, despite conflicting interests. However, following the regulatory framework analysis, this chapter concludes that there is still ambiguous and ineffective content in some regulations; among others, disaster status, budget allocation, data integration, and affirmative policy for the marginal groups. Improved synchronization and harmonization of laws and their derivative regulations is required in order to achieve an equal level of understanding of the disaster management framework among the relevant ministries or agencies. Any conflicting regulations are bound to have an impact on optimising the functions of the institutions and cooperation networks, which

is why good coordination between agencies and between regions (i.e. disaster-affected and non-affected regions) must be supported by a synergistic regulatory framework.

Second, from an institutional perspective, the National Disaster Management Agency (BNPB) remains the key player in optimizing coordination and collaborative governance among stakeholders. BNPB is in charge of coordinating the implementation of disaster management policies in Indonesia. The main actors at local level for disseminating and implementing the disaster-related agenda are BPBDs and BAPPEDAs. Both these actors are at the frontline of concerted efforts to integrate and mainstream the disaster-related agenda, including DRR and community resilience into regional development policy.

Finally, this chapter provides a 'bench mark' of an ideal network based on policy and regulatory framework. Furthermore, having considered the recovery policy and implementation, and having compared a few selected cases, the chapter confirms that the recovery process of Bantul Regency following the Yogyakarta earthquake in 2006 progressed unusually promptly, and primarily as a result of the social capital and cultural values that interacts with leadership effectiveness. Therefore, in the next chapters, this 'bench mark' will be compared to the real situation in the Bantul disaster governance case study, as well as being the input material elaborated in Chapter 8 (i.e. Synthesis).

Chapter 6. An Aggregate Approach for Disaster Recovery Governance: A Multiphase and Multilevel Analysis for Bantul Regency – Yogyakarta Province

6.1 Introduction

Emergency response has received significant attention from disaster researchers and practitioners (Kapucu, 2008; Kapucu et al., 2010; Kapucu and Garayev, 2013; Kapucu and Garayev, 2016; Kapucu and Hu, 2016; Kapucu and Ustun, 2017). However, research on disaster recovery is very limited and has been considered to be often ignored when analysing existing disaster knowledge. To date, there is a lack of systematic research that unpacks the underlying structures and processes underpinning the recovery process (Olshansky, 2005), especially that which uses an interdisciplinary lens and mixed methods. In fact, applied research that examines this matter is seriously lagging behind in comparison to what is required today (Kapucu, 2014).

Referring to this, Kapucu has argued that government agencies at all levels have committed more resources to disaster response or relief efforts but less to recovery, largely because the short-term investments involved in disaster emergency response are logically much more acceptable and easier for the policymakers. Consequently, today there is an urgent need to share responsibilities for restoring and redeveloping communities in the form of an effective inter-governmental and cross-sector collaboration and cooperation within the long-term recovery framework (Kapucu, 2014).

As a result, the following research question is explored in this chapter: 'What were the multiphase governance and multilevel networks that operated during the economic revival in Bantul after the 2006 Yogyakarta earthquake?'. Accordingly, the chapter aims (1) to explore the disaster recovery governance during the recovery phase in Bantul after the Yogyakarta earthquake; (2) to analyze the existing networks on the aggregate level and to explore the mechanisms underlying those networks; and (3) to understand and unpack the principles of facilitating disaster recovery governance and the revival of the local economy.

This chapter consists of six sections: in addition to the introduction and a discussion of the research approach, there are three empirical sections, followed by a conclusion. The first empirical section covers the phases, mechanisms underpinnings and

implementation of recovery governance. The second section analyses the recovery process, using network and qualitative analysis, to uncover insightful mechanisms and lastly, the underlying principles in the recovery governance.

6.2 Research Approach

6.2.1 Underpinning Theories

The troika of sociology, political science and economics, according to Svendsen and Svendsen (2009), represent the three disciplines that heavily influence social capital theory. Furthermore, those disciplines recognize, 'the power inherent in network cooperation – invisible, but arguably with highly visible effects' (ibid., p. 1). The influence of a network in the recovery process in particular, and the betterment of development policy generally, could be in the forms of development assessment, institutional analysis, local development networks, accountability improvement, knowledge exchange, and the integration process (Woolcock and Narayan, 2000, pp. 242-3, see also Chapter 2, Section 2.4.3).

Ostrom, a 2009 Nobel Laurate in Economics, argued that social capital is the very basic underpinning theories of governing the commons (Ostrom, 1990) and collective action (Ostrom and Ahn, 2009): 'social capital provides a synthesizing approach [to] how cultural, social and institutional aspects of communities of various sizes jointly affect their capacity of dealing with collective-action's problems' (Ibid., p.22). Thus, there are three types of social capital that are particularly important in the study of collective action: (1) trustworthiness, (2) network, and (3) informal rules or institutions (ibid., p. 20).

The actions that relate to disaster recovery are the most diverse of all phases in disaster management. Therefore, this phase requires many more resources than others and involves working with individuals, organizations and groups from across affected communities in an attempt to rehabilitate their lives (Kusumasari and Alam, 2012b). In communities, 'bridging' is characterized by open network across social groups, inclusion, and generalized trust, whilst 'bonding' has closed and inward-looking networks, exclusion and particularized trusts, with the primary network of bonding represented by network of family and close friends (Svendsen and Svendsen, 2009).

However, networks are not the only condition required for stakeholder collaboration, as there need to be additional conditions without which collaborative governance will

be difficult to sustain. These include leadership (usually led by the key governmental agencies), deliberative engagement, organized structures, publicly-concerned dialogue and consensus, and shared goals (Ansell and Gash, 2008; Ansell and Torfing, 2015). Consensus and shared goals are also influenced by the norms and availability of information, as trust as the influencing element of cooperation can be either inherited from historical norms and/or through rational choice based on an open and transparent information system (Svendsen and Svendsen, 2009). However, they underline that strategies and plans - including also strategies in the context of recovery- cannot be carried out in a strictly rational manner as they are better embedded in complex cultural 'games' (ibid., p.6).

6.2.2 Methods

Chapter 6 is an exploratory case study that concentrates on the Bantul Regency. The study was conducted in Bantul Regency because this regency suffered the most damage in comparison with other regencies in the 2006 earthquake. On the other hand, it has been illustrated as one of the most successful recovery processes in Indonesia (see Chapter 4). The field studies were conducted for 7 months, from the end of May until late December 2015. An additional two months of fieldwork was carried out in the following year, starting in early August 2016.

The research method used in this chapter is the mixture of qualitative analysis with the support of data and quantitative analysis (primarily from Social Network Analysis/SNA). It is then finally completed by qualitative analysis in order to unpack and synthesize the underlying processes beneath the network (i.e. a sequence of qualitative – quantitative – qualitative methods; see Chapter 4, Figure 4.2.). Both primary and secondary data were gathered. Primary data were collected through in-depth interviews, and secondary data were collected from relevant documents, such as books, academic articles, government and non-government agency reports, and official websites for online data sources. The interview respondent sampling was undertaken based on a preliminary desk study, which was selected through stakeholder analysis (see Chapter 4). This took place prior to the researcher entering the field site.

6.3 Disaster Recovery Governance: Phases, Mechanisms and Implementation

Towards the end of the emergency response, there will be a transitional period (i.e. early recovery), leading to a recovery phase. Some scholars use terminology such as

‘rehabilitation and reconstruction’ to refer to ‘recovery’; however, in this sub-section recovery will be explored in depth, with an emphasis on more than just physical reconstruction. Recovery activities include post-disaster decisions and actions with a mission of restoring or improving the pre-disaster living conditions of affected communities. Recovery activities vary according to the scope of the individuals, organizations and groups involved. At the same time, these activities should encourage and facilitate the adjustments necessary to reduce disaster risks (Tim Teknis Nasional, 2007, p. 30). Thus the role of government in the recovery phase remains vital to defining a strategy, especially at the local level and in specific cases (Kusumasari, 2014b). In the case of the Yogyakarta earthquake in 2006, problems that emerged can be identified as follows (Bantul Regency, 2008, p.140):

— The decline in life spirits due to trauma and psychological disorders associated with the number of fatalities and injuries among families or in the immediate neighborhoods.
— The declining quality of life. This is related to decreasing purchasing power of daily needs because of major loss of property or damage to dwellings and settlements.
— The declining quality of public services due to damage to facilities and infrastructure, including public service office buildings and public facilities, such as schools, community health centers, markets and village halls. On top of this, civil servants and their families were also victims, meaning that public services had to be delivered under emergency conditions.
— Disruption to livelihood; the economy was paralyzed for some time after the earthquake occurred.

Because of an aggregation of the above problems, production largely stopped and the market ceased to function because of damaged buildings and the absence of economic activity. Agriculture, handicrafts and traditional markets, which are the lifeblood of the Bantul people's economy, were affected after the earthquake. With that in mind, the Indonesian Government (Tim Teknis Nasional, 2007, p. 37) emphasized three important recovery aspects: 1) the rehabilitation of housing and earthquake affected settlements; 2) rehabilitation of public facilities; and 3) normalization of livelihoods and the local economy. The first priority was the rehabilitation of housing and reconstruction of human settlements. This priority was chosen because the earthquake had the biggest impact upon homes, which were often also the work spaces for home-based industries. It was believed that rapid housing rehabilitation would spur on the economic sector. Under the government program, support activities through the

project also followed this path, including support to meet the needs of the community and a focus on economic recovery (Sekretariat JRF, 2011).

In this sub-section, five themes concerning the various stages of disaster recovery for economic revival in Bantul Regency, Yogyakarta were discussed. These were: basic need provision as part of early recovery; housing rehabilitation and reconstruction; livelihood recovery; infrastructure redevelopment; and local economic redevelopment. All these stages of the recovery phases were conducted concurrently, and some overlapping activities were indeed intended to strengthen subsequent processes.

6.3.1 Phase I: Basic Needs Provision

Disruption to family life due to disasters, especially economic disturbances, causes families to adopt coping strategies in the form of adaptation and adjustment, one of which is a family expenditure adjustment for the fulfillment of food needs. Coping, according to Sunarti (2013, p. 79), refers to attempts to deal with disruptive, dangerous, threatening and/or challenging conditions when routine or automatic responses are insufficient. Generally, coping strategies carried out by family survivors are related to food needs, including seeking out lower quality food, buying cheaper food, reducing food portion sizes, reducing consumption diversity, buying food using credit, and prioritizing the feeding of children over themselves. Food insecurity, malnutrition and poverty due to debt lead to new problems after the disaster. Accordingly, GoI accelerated the fulfillment of basic needs and sought to normalize people's lives. The government was greatly helped by incoming assistance, either directly to the community, or through coordination with local government. However, the unpredictability of the aid continuity and the limited amount of assistance provided caused unequitable aid distribution. Therefore, the assistance of living costs was initiated by the government, as part of an equitable strategy and simultaneously as a symbol of Bantul's revival (Bantul Regency, 2008, p. 142).

Data is a crucial point; without good and reliable data, it will be difficult to initiate the rehabilitation and reconstruction stages. Thus, one main step taken by the government was to conduct a thorough survey, including improving casualty data and other related data relevant to the disaster impact. Without good and reliable data, it will be difficult to run the entire process of the rehabilitation and reconstruction stage. Data collection was carried out through a governing approach throughout neighborhood associations (i.e. Rukun Tetangga/RT) in Bantul Regency. Furthermore, the Government of Bantul

issued Head of Regency Decree No. 169/2006, dated 2nd June 2006, which established the sub-districts classification as the foundation for the provision of money for food for earthquake survivors in Bantul Regency. Based on the aforementioned decree, the classification of sub-districts as the basis for giving money for food was categorized as follows (Bantul Regency, 2008, p. 116): (1) Sub-district with very severe classification; (2) Sub-district with critical classification with social vulnerability, and(3) Sub-district with medium classification.

This was initiated by a directive issued by the coordinating Minister for People's Welfare on the 30th May 2006, wherein the Minister had assigned the Head of Bantul Regency to provide a living allowance and other financial support. The provision was also supported by a letter from BAKORNAS No. 1/PBP/VI/2006, dated 2nd June 2006 on General Guidelines for Emergency Response. There were several categories of assistance; one was financial support of 2 million rupiah for families who had lost their members in the disaster. This support was paid after claims were verified by neighbourhood associations and sub-district heads. On top of that, there was money for food, widely known as '*Jatah Hidup/Jadup*' (i.e. living allowance guarantee). A living allowance of 3,000 rupiah per day per person and 10 kg of rice per person were given every two weeks. In addition, survivors were also given cash to buy home appliances and kitchen utensils. This amounted to 100,000 rupiah per head of family. Assistance for purchasing clothes worth 100,000 rupiah per person was also offered. If a surviving family consisted of four people, the family would receive the following compensation (Bantul Regency, 2008, p. 121):

Food = IDR 3,000 x 14 day x 4 people = IDR 168.000

Clothes = IDR 100,000 x 4 people = IDR 400,000

Kitchen Utensils = = IDR 100,000

Total = IDR 668.000

The distribution of this living allowance was implemented gradually, starting on 7th June 2006, across the 17 sub-districts and 75 villages. A total of 72,252,360 rupiah was allocated to 796,766 people from the national coordinating body for disaster management (known as BAKORNAS before the BNPB was established), central government, provincial government and local government. However, the money allocated was not fully disbursed (there were 543,420,000 rupiah remaining), given that some people were registered in two sub-districts, some were dead, some had

relocated their families to another city and, interestingly, some decided not to accept the money due to their solidarity with those who did not receive on account of not yet being registered as the recipient of a living allowance (Bantul Regency, 2008, p. 122).

The government's financial mechanism for disaster relief and early recovery in Bantul and Yogyakarta took place in accordance with existing laws and regulations (i.e. Law 17/2003 and Law 1/2004) (Kusumasari and Alam, 2012b, p. 359). In a crisis situation, the government and the legislative budget approval process should be able to speed up the disbursement of funds for government-initiated goods and service procurement (refer to Chapter 4). The disbursement process was quickened because activities funded were either undertaken directly by the government or by donor agencies. Nevertheless, there were also financial sources granted from donor agencies that were used in the recovery phase.

6.3.2 Phase II: Housing Rehabilitation and Reconstruction

Based on data collected by local governments at the regency level, by the 7th June 2006, housing damage was as follows: 71,763 houses were totally destroyed, 71,372 houses were severely damaged, and 73,669 houses were lightly damaged. Most of the affected houses were aged between 15 and 25 years old, and less than 3 percent were houses of traditional design, that is, constructed of wood or bamboo and more resistant to the earthquake's tremors (Kusumasari and Alam, 2012b). In addition, BAPPENAS estimated that losses from this earthquake reached 29.1 trillion rupiah. Of this total loss, around 15.3 trillion rupiah was experienced in the housing sector (Goverment of Indonesia, 2006; Bantul Regency, 2008, p. 116). As an illustration, in the Sub-district of Bantul, 4,708 houses were totally destroyed, 7,338 heavily damaged, and 3,301 slightly damaged. Most of those houses that were damaged or which collapsed usually had these damage combinations: roof damage (32 percent), wall damage (36 percent), and problems with the foundations (32 percent) (Indah et al., 2008, p. 963-4). Furthermore, the three biggest causal factors were that houses did not meet earthquake resistant standards, used traditional cement materials, and did not use foundations (Indah et al., 2008, p. 967).

According to a survey conducted by the Bank of Indonesia (BI, i.e. Central Bank of Indonesia), housing is generally the main economic asset for the poor and the most urgent need post-disaster (Tim Teknis Nasional, 2007, p. 12). Houses do not just provide protection and security for family members, but are also a place of family

business and livelihood. As a result of earthquake damage, many residents were forced to live in refugee shelters and temporary tents, which caused economic shock. The local economy was shaken by the corresponding decline in economic activity, destruction of home-based businesses and loss of family income (Indah et al., 2008, p. 966). Losses from damaged homes and other assets also increased the need for home improvement funds, which greatly disrupted the family economy. The faster the houses were reconstructed and the sooner the earthquake survivors occupied their houses, then finally, the quicker the recovery of the economic sector would take place.

Thus the government realized that housing rehabilitation and reconstruction was the most important step after the early recovery period. However, to implement this was not easy. It required good preparation, with prudent calculation and planning, and great financial support to build hundreds of thousands of homes in a short period of time. Implementation techniques, where government plans intersected with the aspiration of citizens, often led to social conflict. GoI had allocated funds of 2.7 trillion rupiah from the state budget, excluding donor assistance from within and outside the country (Tim Teknis Nasional, 2007, p.15). In order to rebuild the destroyed and severely damaged houses during the recovery phase, housing rehabilitation and reconstruction was initiated in August 2006. In this phase, the government played the role of facilitator, whose job was to ensure that the rehabilitation and reconstruction process ran smoothly by maintaining: price and stock stability of raw materials used in construction, the availability of manpower' and the technical requirements of earthquake-resistant buildings.

To support the rehabilitation and reconstruction of permanent housing, the provision of temporary housing assistance preceded the program. Most temporary housing projects were conducted by non-government organizations, or by charity organizations and donors. The temporary housing program was deemed beneficial to the recovery process, because with a temporary home people can continue with their household activities whilst waiting for permanent houses to be built (Sekretariat JRF, 2011, p. 26). Though this temporary housings was claimed to speed up the economic recovery of the affected areas (Sekretariat JRF, 2011, p. 48), there are also circumstances where the waiting period for temporary housing construction was much longer than the construction of permanent housing itself. Finally, these semi-permanent buildings were utilized as small shops by the beneficiaries (BAPPENAS, 2010). Meanwhile, the construction of permanent houses, in addition to being supported by international NGOs and agencies, was mainly carried out by the Ministry of Public Works, through

REKOMPAK, with a community engagement scheme. REKOMPAK provides earthquake-resistant core houses that can be modified and completed according to individual households' needs (Sekretariat JRF, 2011, p. 27). The community-based approach to housing reconstruction (called REKOMPAK) was initially developed after the Aceh tsunami (i.e. Aceh reconstruction through the Multi Donor Fund Facility/MDFF Project) which proved to be beneficial to the reconstruction of Java. It has also been adopted by GoI as a model in other post-disaster housing reconstruction projects (Sekretariat JRF, 2011, p. 43).

REKOMPAK focused on rebuilding lives in line with an effort to build a community (World Bank, 2012, p. 17). At first, it situated beneficiaries as those responsible for rebuilding their own homes, which was a new idea and seemed to be much more risky than the usual approach, which gives contracts for housing reconstruction to contractors (World Bank, 2012, p. 9). Nevertheless, it was claimed that this approach would help the recovery process by empowering affected communities and allowing them to assume responsibility for their own recovery. Thus existing social capital in affected communities was deployed in order to manage reconstruction resources (World Bank, 2012, p. 17).

In a coordination meeting on the 6th September 2006 (Bantul Regency, 2008, p.127), it was agreed to immediately form a small community group (*PokMas*). *PokMas* consisted of 8 to 15 members, who were representative of the heads of families and which included: one chairman and concurrent member, one secretary and concurrent member, and one treasurer and concurrent member. It was decided that a facilitator would be recruited who would serve as the Management Consultant of the Regency (*Konsultan Manajemen Kabupaten*/KMK). This typical community-based approach places responsibility for the rebuilding process, including management of funds, directly into the hands of small community groups in affected communities (World Bank, 2012, p. 8).

In addition, through this community-based approach, beneficiaries built a sense of ownership and transparency; almost two thirds of Bantul Sub-district residents joined in the rehabilitation and reconstruction of houses through mutual assistance (i.e. gotong-royong) (Indah et al., 2008, p. 963). In Yogyakarta Province, approximately 70 percent of households affected were given IDR 15 million per household to construct or renovate their house. Households were expected to manage the reconstruction themselves using the funds provided. Technical audits conducted by two leading

universities, UGM and UNDIP, reported that the houses were of good quality and built in accordance with acceptable earthquake standards, resulting in a 99% occupancy rate (Sekretariat JRF, 2011, p. 27).

Through this community-based approach, GoI also promoted three stages of the rehabilitation and reconstruction programme (Kusumasari and Alam, 2012b, p. 359). The first stage is preparation, which relies on consultant procurement, facilitator recruitment and early outreach. The second stage is community organisation, to identify victims who are entitled to receive assistance, to set up community groups and to engage in the participatory planning, wherein housing rehabilitation proposals are developed. The final stage is the development of houses by people based on the priorities they themselves set. Those whose houses were considered to be only minimally damaged were not given any housing support, while a few others were given new houses constructed by donors (or non-governmental agencies). The regulation regarding this was stated more comprehensively in Head of Regency Letter No. 413/3772, dated 9th September 2006 concerning the Implementation of Post-Earthquake Rehabilitation and Reconstruction (referring to the Yogyakarta Provincial Governor Regulation No. 23/2006 on the Operational Guidance for Post-Earthquake Rehabilitation and Reconstruction in Yogyakarta Province in 2006). This was addressed to all Heads of Sub-Districts and Villages in Bantul Regency (see Appendix 5.1).

6.3.3 Phase III: Livelihood Recovery

The economic disruption experienced by disaster survivors is varied. Generally, it is due to an increase in household needs that cannot be met by existing income, either because of a decrease in income or loss of livelihood. It has been shown that the loss experienced by a family is proportional to the amount of debt it has (Sunarti et al., 2013). This was not only felt by the survivors of the Yogyakarta earthquake, but also by many survivors in other disasters. The following phenomena can be seen in almost all catastrophic events in Indonesia: (1) an increase in expenditure due to the need to repair houses and buy new furniture; (2) a decrease in asset ownership; (3) an increase in debt; and (4) loss of income or loss of livelihood (Sunarti et al., 2013).

The GoI's over-focus on housing sector reconstruction was considered to be a factor inhibiting economic recovery, as it was claimed that the economic recovery then got less attention from the government. Nevertheless, it was well known that the

restoration of homes had also restored places of business, especially for micro-enterprises (Tim Teknis Nasional, 2007, p. 18; Sunarti, 2013, p. 98). Furthermore, the delay in disbursement of housing development funds caused disaster victims to use assets or savings to repair houses, and consequently delayed the economic recovery. However, the delay in handling disasters, which was directly related to livelihood, had also added to victims' psychological trauma and life pressures. According to local government, until about a month after the earthquake, psychosocial and psychiatric units of DR. Sardjito Hospital, Yogyakarta had found 53 patients, among 853 earthquake casualties. requiring psychiatric care interventions (Tim Teknis Nasional, 2007, p. 6).

According to the government, through the special staff of the President for Social and Disaster Relief, the post-earthquake recovery of Yogyakarta focused on housing assistance and rebuilding damaged infrastructure, but in 2008 the focus shifted to economic development through the provision of capital assistance to MSMEs (Goverment of Indonesia, 2010, p. 20). In general, the program aimed to provide financial support, in cash or in kind, linked to technical assistance for micro and small enterprises, to support defaulting lenders to develop effective strategies for viable enterprises, and to establish soft-loan mechanisms to rehabilitate damaged medium-sized business infrastructure and capital equipment (JRF, 2008; as cited in Resosudarmo et al., 2012, p. 237). Furthermore, the government also continuously strove to encourage the economic sector to run immediately, among others, by encouraging farmers back to the paddy fields, craftsmen to return to their production activities and traditional market traders to return to the market. To balance the spirit of the people, the government strove to provide assistance to farmers through: 1) assistance in the form of seeds, pumps or the acceleration of irrigation repair; 2) provide assistance to craftsmen in the form of handicraft tools and machinery, business capital access, and acceleration of other facilities to support Bantul handicraft production; and 3) assisting emergency market operations and accelerating improvement of market facilities, so that economic transactions can fully recover (Bantul Regency, 2008, p. 143): 1).

On top of that, with full awareness that the economy will not recover within a short period of time, the government put forward efforts to reduce the burden faced by individuals (Bantul Regency, 2008, p. 143), such as land and building tax exemption, free building permit fees (IMB), free ID cards, free market levies, free medical treatment in government clinics (*Puskesmas*) and third-grade hospitals, and a removal

of the obligation that students wear uniforms to school. According to a survey conducted between March and November 2007 in 20 building material shops in Bantul Regency, there was an increase in the cost of housing construction due to the rising price of building materials and a shortage of local construction workers, which meant that it was necessary to bring in outside workers at a higher price (Nurhadi, 2015, p. 114). Using their existing capabilities, the government also strove to control the price of cement and fertilizer through cooperation with factories, alongside other efforts. In essence, efforts were introduced to reduce the burden faced by individuals to the lowest point possible.

There was also a community development program introduced in order to increase poor people's income in accordance with their expertise. The source of funding for this program originated from the Bantul Regency budget (APBD) in 2006. The goal of this village-based program was to strengthen the ability of the poor to create and seize productive business opportunities and expand their marketing to increase revenue while creating new jobs. The target of this program was poor families, who formed groups as a requirement to obtain initial capital assistance, totaling 10 million rupiah. This capital then became the group's wealth, taking the form of fixed capital, business capital, wages for labor and depreciation. The proportion was agreed by the group. In the implementation of these activities, the group was accompanied by facilitators, communicators and mediators (Bantul Regency, 2008, p. 126).

By June 2008, the government had spent approximately 5.4 trillion rupiah (US$ 570 million) on housing. Alongside this, the Java Reconstruction Fund[16] (JRF) had spent as much as US$60 million on various activities (mostly housing). The JRF had allocated approximately 20 percent of its total commitment to livelihood recovery programs. More than 40% of the beneficiaries of JRF-IOM's technical assistance activities and microfinance loans through the JRF-GIZ project were women. Much of the assistance was in the form of training, which ultimately provided jobs that gave additional income to women. In late 2008, JRF-IOM's livelihood restoration project began its asset replacement activities, which included: replacement of productive physical assets, such as equipment, livestock, and facilities damaged or destroyed, as well as the implementation of technical assistance. Meanwhile, the JRF-GIZ project started

[16] The Java Reconstruction Fund is a multidonor reconstruction fund pledged by the European Comission, the Netherlands, the UK, Canada, Finland and Denmark. It is governed by a Steering Committee and co-chaired by the Government of Indonesia and the European Commission, with the World Bank as Trustee (see also Appendix I).

technical assistance activities and facilitation of access to financing in May 2009. The JRF-GIZ's technical assistance program includes production, entrepreneurship, and sales and marketing skills (Sekretariat JRF, 2011, p. 29-30).

6.3.4 Phase IV: Infrastructure Redevelopment

In the infrastructure sector, damage and loss in terms of transportation had reached 90 billion rupiah. For all infrastructure, the total was 397 billion rupiah (Goverment of Indonesia, 2006, p. 11). Therefore, besides priorities given to the energy sector, the government also prioritized the restoration of roads and bridges and irrigation facilities (Bantul Regency, 2008, p. 123). The total damage and losses can be seen in Table 6.1.

Table 6.1. Damage and Losses (Billion Rupiah)

Sectors	Damage (Billion Rupiah)	Losses (Billion Rupiah)	Total Damage and Losses	Private Ownership	Public Ownership
Housing	13,915	1,382	15,296	15,296	0
Infrastructure:	397	154	551	76	476
Transport & Communication	90	0	90	0	90
Energy	225	150	375	0	375
Water and Sanitation	82	4	86	76	10
Productive Sectors:	4,348	4,676	9,025	8,854	170
Agriculture	66	640	705	700	5
Trade	184	120	303	138	165
Industry	4063	3899	7962	7962	0
Tourism	36	18	54	54	0
Social Sectors	3,906	77	3,982	2,112	1,870
Cross-Sectors	185	110	295	48	247
Total (Billion Rupiah)	22,751	6,398	29,149	26,386	2,763
Total (Million US$)	2,446	688	3,134	2,837	297

Source: Goverment of Indonesia (2006, p. 12)

The sector worst affected was energy, with damage to electricity transmission and distribution facilities estimated at a total of 225 billion rupiah. In the transport sector, there was widespread but minor damage to roads, mainline railway tracks and associated infrastructure. Meanwhile, damage in the water and sanitation sectors was mostly due to shallow wells, which serve as the main source of water in Bantul. Telecommunication and postal services suffered very limited damage; such damage was principally to base stations for mobile and fixed wireless access phones and to some of their offices. However, the main public services, such as the water supply, drainage and electricity system, continued to operate, although with supply shortages in the heart of disaster-affected areas.

The local government had given priority to the rehabilitation of public facilities that support the local economy and encourage the rebuilding of people's well-being, such as market rehabilitation. For that purpose, the Bantul local government and the local parliament agreed to revise the 2006 budget and allocate funds for post-earthquake recovery. The government provided assistance with funding ranging from 20 to 200 million rupiah, depending on the level of destruction (in up to 75 villages) for the purchase of bamboo, materials and cleaning tools. Total funds allocated were 7.8 billion rupiah. In addition, the budget also provided 70 billion rupiah for road construction, water management, and other recovery efforts (Kusumasari and Alam, 2012b, p. 359).

6.3.5 Phase V: Local Economic Redevelopment

After the 2006 earthquake struck Bantul, its economy slowed down by 23 percent compared to pre-disaster projections (Kusumasari and Alam, 2012b, p. 355). The decline in economic performance resulted in the loss of a large number of jobs, with most stemming from what were previously the most productive sectors, i.e. trade, industry and tourism (Subagyo and Irawan, 2008). BAPPENAS also noted that the damage and losses to private sector buildings and productive assets was around 8.8 trillion rupiah, which resulted in the loss of future potential revenue (Goverment of Indonesia, 2006, p. 12). Most of this revenue was attributed to the damage experienced by MSMEs, which have always been the backbone of the regional economy of Bantul and Yogyakarta (Tim Teknis Nasional, 2007, p. 8-10). Furthermore, based on investigations at the regency level, in the economic sector, there were 1,328 craftsmen and 10,781 traders who needed additional capital due to a loss of business assets. Since, for instance, the pottery industry clusters in Kasongan or leather-based handicraft clusters in Manding were conducted on a household scale, damage to houses brought about disruption to the productive output of MSMEs. Approximately 65,000 workers lost their jobs, 90% of whom were in MSMEs (World Bank, 2012). On top of this, as many as 30,000 companies experienced disruption, such as difficulty sourcing raw materials and the blocking of trade routes (Tim Teknis Nasional, 2007, p. 10). In addition to this, 29 traditional markets were destroyed, which resulted in additional economic downturn (Bantul Regency, 2008, p. 116).

The earthquake also caused damage and losses for banks and non-bank financial institutions (NBFIs). Damage to all infrastructure and banking facilities reached 37 billion rupiah, while damage and losses in the non-bank financial sector was estimated to be around 190 billion rupiah (this stemmed from defaults on loans to more than

1,785 microfinance institutions (MFIs) in Yogyakarta) (Tim Teknis Nasional, 2007, p. 12). Bank of Indonesia (BI) quick survey conducted a month after the earthquake showed that the disruption of business activities in Yogyakarta brought about a market loss of 34% (Tim Teknis Nasional, 2007, p. 12), which resulted from building damage and a lack of raw materials, facilities and production tools. Furthermore, BI has predicted that efforts to rejuvenate business activity could have been implemented within a period of 6 months. With this in mind, the government prioritized the revitalization of the regional economy and the economic activities of communities in the following ways (ibid., p. 12):

- Recovery of the production and service sectors that have the greatest employment potential
- Recovery of market access for MSMEs
- Recovery of financial institutions and banking services
- Management of natural resources and environment to anticipate excessive exploitation of natural resources
- Restoration of security, order and judicial services
- Recovery of community food security

However, when the National Technical Team (*Tim Teknis Nasional*/TTN) completed its mandate in 2008, most of the reconstruction and rehabilitation activities - including most of the housing reconstruction - had been completed. According to its two year monitoring and evaluation report (2006-2008) on post-disaster rehabilitation and reconstruction in Yogyakarta, the recovery of the regional economic sector in Yogyakarta Province got a lack attention, which implies that further assistance was needed to accelerate the economic recovery (Tim Teknis Nasional, 2007). This was particularly true in the handicraft sector, which was one of the most severely affected sectors (Sekretariat JRF, 2011, p. 23).

We can see from the above list that what needed to be addressed quickly was the loss of potential markets, which would affect the growth of various industries of all sizes in the long run. A loss of markets has been one of the most significant factors impacting businesses, alongside rising production costs, debt repayments and damaged facilities (Bantul Regency, 2008, p. 111). To restore the market, most MSMEs needed capital injections (Tim Teknis Nasional, 2007, p. 12). In May 2009, by providing access to financing livelihood recovery projects, JRF-GIZ channeled assistance to 26 microfinance institutions (MFIs) as part of a revolving loan to rebuild businesses. The project actively

sought out MFIs who were able to provide group loans, for example Rural Credit Enterprises (i.e. BUKP) in Yogyakarta, to reach marginal beneficiaries outside the formal banking sector who were unable to meet standard potential debtor requirements (Sekretariat JRF, 2011p. 30). Furthermore, *PT. Permodalan Nasional Madani* (PNM; i.e. National Civil Capital) was selected as the top institution for the revolving loan scheme because of its mandate to support MSMEs and its experience in managing revolving loan funds after project closure and the JRF (Sekretariat JRF, 2011, p. 30). Institutional arrangements with PNM took time, but since mid-2010, revolving loan funds have been channeled to various MFIs, including rural banks (i.e. BPR) and cooperatives. Furthermore, local governments were expected to monitor the sustainable use of their funds after the project officially closed (Sekretariat JRF, 2011, p. 31). These topics are broadly discussed in Chapter 6, where we can see that the problems of market and capital access were perceived to be very important by MSMEs and entrepreneurs.

6.4 Disaster Recovery Networks: an Aggregate Approach

The next sub-sections explore the networks and recovery mechanisms just after the Yogyakarta earthquake and during the recovery period. The first sub section explores the recovery network from multiphase and multilevel perspectives. The key finding in this section is that the core actors involved in the governance of recovery at the multilevel and multiphase were still dominated by central government actors (44.4 percent) supported by across level leaderships, local governments units, and relevant activities (e.g. coordinating organizations, national programs and ad-hoc projects). The second explores the mechanisms beneath the network according to six themes: empowering through leadership, local government response, solidarity within the network, local opinion leaders, togetherness and mutual cooperation, and collaboration amongst stakeholders.

6.4.1 Multilevel and Multiphase Networks Analysis

In the first few weeks after disaster, BAKORNAS (red node 22) duties were fully supported by the military (i.e. TNI, red node 25), the police (red node 26) and BASARNAS (i.e. Search and Rescue, red node 24). Several hours after the disaster struck, a military plane flew over the affected areas and took aerial photographs that would later be used in the distribution of aid and in the assessment of damage (Tim Teknis Nasional, 2007). The President (red node 1) himself monitored the situation,

and relocated his office temporarily to Yogyakarta for several days. However, SATKORLAK PB of Yogyakarta Province (black node 32) and SATLAK PB of Bantul Regency (red node 33) experienced difficulty in mobilizing and coordinating cross-sectoral local government units (red node 35, 36, 37, and 38) (BAPPENAS, 2010), mainly due to many officials themselves being injured or involved in helping relatives and the neighborhood. The role of NGOs and non-affected community (some part of red node 78 and 79) substantially filled the gap of the lack of local government presence during the early (days) aftermath. Some of the INGOs (e.g. red node 64 and grey node 62) that have placed nearby the earthquake location -due to the anticipation of the eruption of Mount Merapi- were also helpful.

In terms of the capacity of local government to respond the crisis situation, the local governments' capacity needs to be further improved by among other things, upgrading knowledge and skills through regular drills. Most noticeable was when government units carried out a response in accordance with their mandated roles and functions, with limited collaboration and without appropriate analysis of available resources and survivors' needs (Subagyo and Irawan, 2008). Those knowledge and capacity gaps happened during the emergency response; however, approaching the early recovery period, the local government adapted. This governmental shock was partly understandable since the emergency period was not fit for the structures of bureaucracy. The former head of the regency (red node 31) took a lead on tackling this issue, and some quick decisions and rapid actions were made through his leadership (Kusumasari and Alam, 2012a). In addition, two weeks after the earthquake, the governor (red node 30) greeted and reminded his people about the values of togetherness, solidarity, family strength and fighting spirit, to 'forget bitter memories, and revive soon to improve upon the fate' (The Goverment of Yogyakarta Special Province, 2008, p. 25).

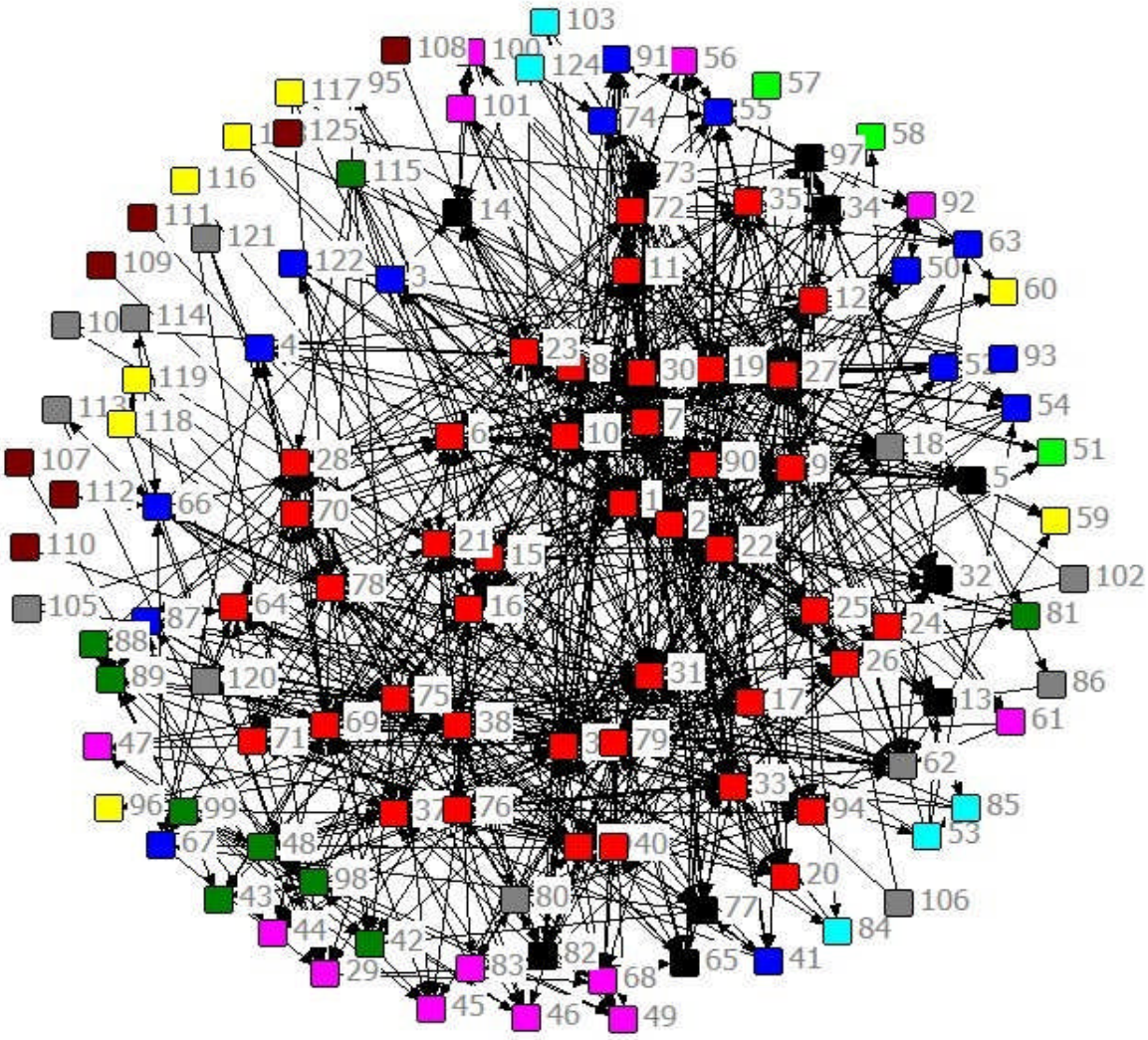
The recovery effort had been heavily focused on rebuilding houses and public infrastructures damaged by the earthquake (back node 73). At the end of 2007, a substantial number of surviving households had completed rebuilding their house. However, insignificant resources and a less coherent strategy were provided to the livelihood restoration and local economic development (Tim Teknis Nasional, 2007). A joint study by United Nations Development Program (UNDP, blue node 54) and United Nations Coordination Center (UNCC) shows that although small and medium enterprises have restarted business, sales still remain low (Subagyo and Irawan, 2008). Furthermore, it was explained that there needed to be local economic policies that

could prevent more people from falling into the trap of poverty. This issue was then addressed by governmental national program (red node 69 and 70) and supported by ad hoc livelihood project (red node 72).

The President formed a national coordinating team (red node 90) in July 2006. The coordinating team was chaired by the Coordinating Minister for Economic Affairs (red node 6) and the Coordinating Minister for People's Welfare (red node 7) as its deputy. This coordinating team whose members consisted of the main government bodies was supported by a national technical team (i.e. Tim Teknis Nasional/TTN, red node 27). TTN, which consisted of academics and bureaucrats and was domiciled in Yogyakarta, acted as a liaison between the Coordinating Minister for Economic Affairs and the affected regions (i.e. Bantul, red node 36; and Yogyakarta Province, black node 34) and supported the roles and functions of the national coordinating team.

The support provided by the TTN for the national coordinating team was very important; among others, oversaw the implementation of the recovery and especially brought together various stakeholders at monthly co-ordination meetings until the end of their work in 2008, before finally their duties were then taken over by BAPPENAS (red node 19). The monthly meeting held by the TTN was meant as an important reference for stakeholders to find out the progress of the recovery, what recommendations needed to be addressed, and what programs which were not yet optimal in their implementation could be fulfilled by other stakeholders. The coordination was also undertaken with many international agencies, donors and NGOs involved in the recovery process. There were approximately 546 organizations providing assistance to the post-earthquake recovery program (both Yogyakarta and Central Java), contributing to 20 percent of the total recovery budget, and consisting of 248 national NGOs, 127 international NGOs, 15 international agencies, 16 UN family organizations, 17 donors, 24 universities, 14 military units and 85 commercial companies and other organizations (BAPPENAS, 2010, p. 135). In line with this fact, the most influential actors (according to ‘in-degree’ and ‘betweeness’ nodes) within the inner circle network were TTN (normal in-degree = 16.532; normal betweeness = 15.820) and BAPPENAS (16.943 and 9.844 respectively). During the recovery period, BNPB and BPBD were not established yet, therefore, TTN and BAPPENAS were meant to substitute their roles in governing the recovery process.

Figure 6.1. Inner Circle Network Analysis



The actors' network was derived from data obtained in interviews, questionnaires, the legally formal duty and responsibility as reported on the official websites, as well as official reports of government programs and ad-hoc projects. Using K-Core analysis and then standardized by iterative multidimensional scaling (MDS), the clear visualization of the inner circle network is produced (see Figure 6.1). The core actors are located in the inner circle of network, and mostly shown by core group of red nodes. As has been explained earlier, the member of inner circle network are mostly central governmental actors (44.4 percent) supported by many others actors totaling of 45 actors. The result was based on two complementary analyses: K-Core and Core-Periphery Class. The description of inner circle network composition can be seen in the Table 6.2.

From the Table 6.2 below, it can be inferred that the collaboration between governments, international agencies, donor communities, NGOs, universities and the

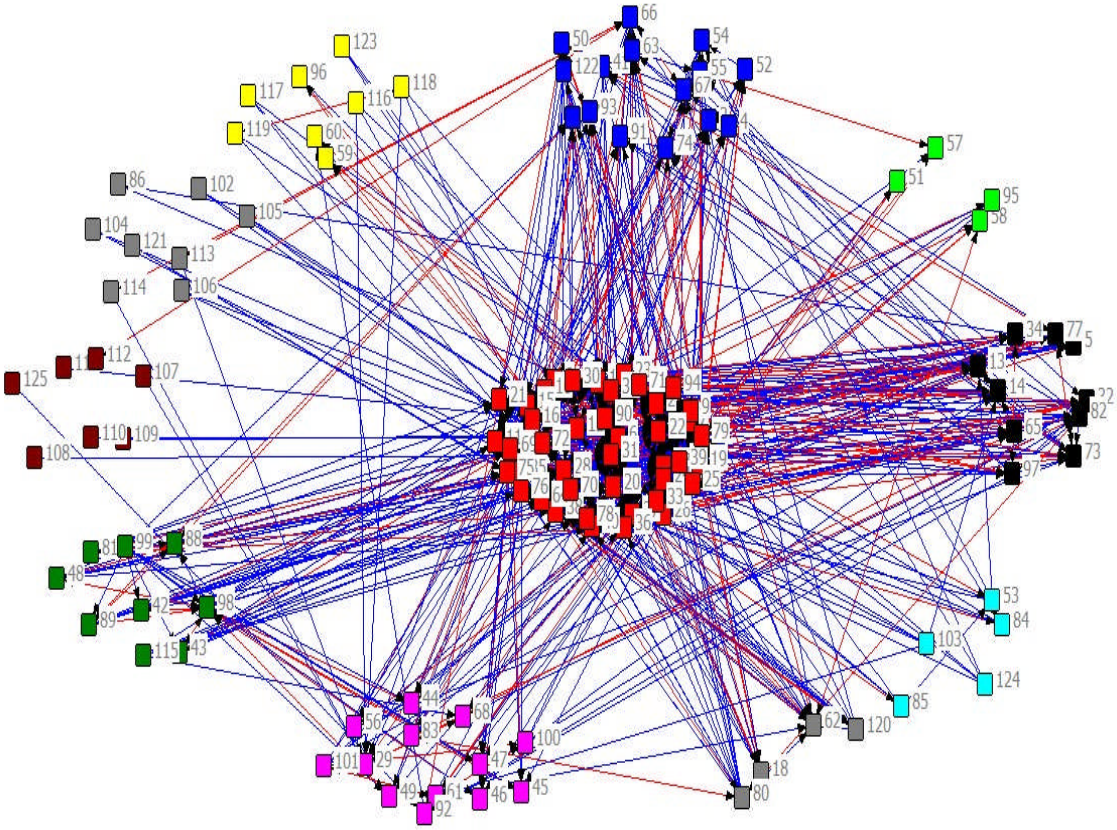
private sectors is the key to the integrated disaster governance. Together with the communities, non-governmental organizations positioned themselves as the governmental partners and contributed assistance significantly. Often community groups, NGOs and universities were quicker to deliver assistance and donations to the survivors, because they did not experience bureaucratic procedures, for instance, the motor trail communities distributed food and aid to people domiciled in the heavy terrain. However, such sporadic assistance should not be expected to be distributed equally to the vast area of Bantul. Apart from its limited funds, the range of their networks also cannot reach the remote areas. Through observations, the establishment of coordination, partnerships and collaboration with local governments remained essential since the government has bureaucratic connections down to villages or perhaps smallest neighborhoods (i.e. RT/RW) (INT3, as documented in BAPPENAS, 2015b). Furthermore, the respondent explained that socio-cultural factors may play an important role in the recovery process in Yogyakarta, but the most critical point during his observation was the commitment of local governments in implementing the agreed programs.

Table 6.2. The Composition of the Core Network Actors

Category	Total	K-Core Analysis	Core-Periphery Class Analysis
Leader (including: central, local and local opinion leaders)	6	Node 1, 2, 30, 31, 39, 40	Node 1, 2, 30, 31, 40
Central Government	20	Node 6, 7, 8, 9, 10, 11, 12, 15, 16, 17, 19, 20, 21, 22, 23, 24, 25, 26, 94	Node 6, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 19, 21, 22, 23, 25,
Local Government	5	Node 33, 35, 36, 37, 38	Node 33, 36, 37, 38
National Program	3	Node 69, 70, 71	Node 69, 70
Ad hoc Governmental Actors	3	Node 27, 28, 90	Node 27, 90
Ad hoc Project	2	Node 72	Node 72, 73
NGOs	2	Node 64	Node 62
Beneficiaries Groups (including: MSMEs, *Paguyuban*, and households)	4	Node 75, 75, 78, 79	Node 75, 76, 78, 79
Total	45		

From the Figure 6.2 below, one can see that apart from the inner circle network there are also few outer networks. Some of these networks can be easily identified based on the characteristic of their activities, such as yellow nodes' network for charity or donations activities or blue nodes' network for housing and shelter provision activities. However, most of them are actors with overlapping activities and duties; therefore, the characteristic may not be seen homogenous within the network. For that reason, the next sub-section will explain further the mechanism undergone beneath the networks.

Figure 6.2. Outer Networks Grouping Analysis



6.4.2 Insight Mechanisms of the Recovery Networks

6.4.2.1 Empowering through Leadership

The former head of Bantul Regency, Dr. HM. Idham Samawi, in his reflective memoir, stated that the statistical data on the number of casualties, damage and loss was only a small part of the effort to understand the hardships faced by the people after the earthquake (Bantul Regency, 2008, p. 139): 'the numbers (of damage and losses) will not be able to describe the sadness of the survivors, who were forced to separate from the loved ones, or lost property that has been collected little by little over the years'. He further explained that how one understood disasters would influence how the disaster itself is managed. The comprehensive view on the problem should also be fully oriented towards reducing the burden of disaster victims, and would be best rely on field observation, with special consideration of local wisdom and cultural values, that is '*gotong royong*, *saiyeg saeka praya*' (i.e. mutual cooperation and sharing in good and sad, Bantul Regency, 2008, p. 139).

He, together with Governor of DIY Sri Sultan Hamengkubuwono X, played a significant role in reviving the spirit of Bantul's people in particular and the people in Yogyakarta in general (Bantul Regency, 2008, p. 19). Sri Sultan Hamengku Buwono X, in a forum with the Head of Regency, community leaders, cultural figures, citizens, and others, reminded that for the people of Java (Bantul Regency, 2008, p. 113), 'the loss of property means to not lose anything, losing (members of) family means to lose a half of himself, losing of faith means to lose everything'. However, in this case, it cannot be denied that Bantul and Yogyakarta benefited from the monarchy system in Yogyakarta, in which it would be implicitly easier for the leaders to instruct their people to be more engaged in the recovery process (Kusumasari, 2014a, p. 107).

The 'Bantul Bangkit' movement triggered by these leaders was an important part of the recovery process. Through a variety of community activities, whether facilitated by the government or purely community-driven, the spirit to bounce back from the crisis was introduced, and essentially, meant encouraging people (Bantul Regency, 2008, p. 143) to: 1) get up immediately, and wipe out grief by working hard; 2) not rely on aid, because assistance is limited and temporary; and 3) increase cooperation based on local wisdom. The socialization of this movement was achieved through various means, such as '*rembug*' and '*musyawarah*' (i.e. local regular citizen meetings), the creation of a '*Bantul Bangkit*' song, community media, as well as the installation of evocative banners. Banners and posters were installed in a number of strategic places to strengthen the psychological power of the community. It was expected that local people would optimize their own savings and property and that they would not depend on temporary and limited assistance (Bantul Regency, 2008, p. 111), particularly if the aid was a binding agreement that would implicitly burden future generations, such as loans (Bantul Regency, 2008, p. 113).

As part of his leadership style, Dr. HM. Idham Samawi obliged all office unit heads to get involved and respond to any aspiration from the community, and at the same time the community had the opportunity to report to the Head of Regency any officer who did not appropriately respond to such needs. This approach aimed to change the mindset of the bureaucracy, which must serve the people and not be served by the people. In terms of disaster response and recovery, from public talks by the Head of Bantul Regency[17], it was revealed that the government acknowledged the power of public

[17] The former head of Bantul Regency, Dr. HM. Idham Samawi, gave a public talk on the DRR Commemoration Day in 2015, in which the researcher participated.

participation to support the recovery programmes and ensure that they ran smoothly (Kusumasari and Alam, 2012b, p. 360).

The Bantul Regency head has shown responsive leadership qualities by providing adequate assistance to the victims (Kusumasari, 2014a). Through a crisis situation, the leadership qualities of local leaders were tested by the capability to take the right decisions in a short period of time. This capability is important, especially to avoid further disasters emerging, such as social conflict. In addition, the coordination of small units such as villages has shown how the bureaucracy can work together, not only in terms of different government departments working together, but also government and society working together. In addition, meetings between stakeholders and organizations involved in helping the community were also routinely performed. Structural barriers between the Head of Bantul Regency and Governor were almost nonexistent (Kusumasari, 2014a, p. 107), since the Governor of the Province of Yogyakarta gave away a wide range of mandates and authorities, meaning that innovative and progressive policies could be enacted immediately by Head of the Regency.

6.4.2.2 Local Government Responses

In terms of disaster management capacity, including earthquake and other disasters, Bantul Regency has been shown to have a low level of capability (Kusumasari and Alam, 2012a; Kusumasari, 2014a). In the 2006 Yogyakarta earthquake, Bantul Regency suffered the most severe damage. In the Provincial Disaster Management Plan (2013-2017), Bantul Regency - along with the city of Yogyakarta and Sleman regency - were even placed in a priority zone of earthquake disaster management. Accordingly, this sub-section will discuss the local government response with regards to its disaster management capability.

The locality aspect of a region becomes a consideration of the post-disaster recovery process. Therefore, local government plays an important role in disaster management (Kusumasari, 2014b; Mardiah, Andri N. R. et al., 2017). However, in the aftermath of the earthquake, due to a lack of government preparedness in such uncertain times, the government implemented a 'panic management' plan (Bantul Regency, 2008, p. 108). Disaster is a critical situation that generally leads to a lack of adequate resources. Although the government was not completely paralyzed, the coordination system, which relied heavily on office facilities, was disrupted in the aftermath of the

earthquake. The government was not functioning optimally and, as a result, the coordination effort was run on an emergency basis that ultimately lowered the quality of public services. This generally caused delays to the entire development agenda (Bantul Regency, 2008).

Even so, public officers and apparatus whose housings were also damaged were still willing to help overcome the impact of disasters, for example by providing and distributing food and medicines. In principle, the government was keen to cooperate and to create synergies, especially with various parties that channel aid (e.g. external communities, groups and even other countries). However, in channeling the aid, the problem facing the government at that time was a difficulty in obtaining accurate data. In a situation of uncertainty and panic, data continually changed and evolved according to the latest findings. Inconsistencies in data that was always changing caused mistrust and potential inaccuracies in aid disbursement (Bantul Regency, 2008).

The recovery phase in Bantul comprised both short-term and long-term goals. In principle, the approach taken in Bantul's disaster governance situated survivors as subjects; a whole person whose rights and obligations as disaster sufferers must be respected (Bantul Regency, 2008, p. 141). However, the complexity of the problems faced by the local government grew with the increasing diversity of internal and external public views, which later influenced people's attitudes and actions in Bantul. The local government claimed to have coordinated and communicated the programs in order to reduce misunderstandings. In addition, the local government sought to harmonize the interests of various parties, including survivors, central government, international agencies, donor communities, NGOs, corporate bodies, universities, community organizations, and so on, all of which required certainty that the assistance channeled was really on target and met the needs of survivors (Bantul Regency, 2008, p. 141). Thus the main duty of the Bantul Regency government in addressing post-earthquake problems was to build synergy, awareness, mutual trust and mutual respect in order to help ease the burden faced by those suffering and speed up the recovery process.

To speed up the recovery process, a stimulus fund for disaster survivor groups was also established to increase the value of togetherness and mutual cooperation (Sunarti, 2013). The determination of the types of activities and businesses funded was carried out in a participatory manner together with the community and government representatives, taking into account various mutually agreed upon terms. The local

government also established community development programmes which consisted of a group of poor communities, each of which had been given initial capital of 10 million rupiah to run small businesses (Kusumasari and Alam, 2012b, p. 359). Disaster management lessons from Bantul and a few other cases contributed to institutional arrangements for post-disaster revolving funds, implemented through the National Community Empowerment Program (i.e. PNPM) and PNM (Sekretariat JRF, 2011, p. 43), so that the program can readily respond to people's needs, especially when disasters strike in the future.

6.4.2.3 Solidarity beneath the Networks

The revival spirit was influenced in part by high levels of solidarity inside and outside Bantul. In fact, solidarity in the community groups greatly influenced the recovery process in Bantul, starting from the rescue of victims, the provision of temporary shelter, program information, basic social services, mental rehabilitation, housing redevelopment, basic facilities and infrastructure improvements, and local economic recovery (Badri et al., 2008, p. 67). In the 2006 earthquake, solidarity was started by local people who were unaffected or who had only been partly affected by the earthquake (Shakuntala, 2007, p. 71). This group of people then attempted to rescue those who were affected by using their available resources. Following their efforts, local government, and local and international NGOs set up information desks at the Head of Regency's office to organize coordination of healthcare and provide logistical support (Kusumasari and Alam, 2012b, p. 360).

Local government, which holds prime responsibility for recovery, has the greatest stake and authority to positively and directly influence the decision-making and action-taking that encompasses the recovery process. As a consequence, local government is ultimately accountable for the physical, social and economic outcomes of the recovery process (Schwab, 2014). However, usually, in addition to the existing community group (i.e. neighbourhood group and business community), there always will be many more new actors and organizations that join after a disaster which function to fulfil the information gaps and provide more resources, primarily in the form of labour, technical assistance, and donation (Schwab, 2014, pp. 134-5). In Bantul, this was felt and lasted for the first few weeks. Well-known as an educationally- and culturally-oriented city, Yogyakarta got more than enough, if not said abundant attention, not only from central government but also from many organizations based outside its territory. Assistance that came from networks far outside the region, such as university alumni associations

of most universities in Yogyakarta, or even migrant' workers originating from Yogyakarta and its surroundings had shown a high form of solidarity.

Furthermore, the response from local, national and international donors to help people affected by the earthquake was overwhelming, and Yogyakarta Province was inundated with humanitarian organizations within a few hours of the disaster. It is argued that one of the factors influencing the successful disaster management in Bantul was the fact that it was close to Jakarta; people thus had greater access to aid and greater political influence (Kusumasari, 2014a, p. 106). The proximity of Jakarta and Yogyakarta may also be seen from a historical perspective, particularly prior to the independence of Indonesia, when Yogyakarta was once the capital of Indonesia during the war (The Goverment of Yogyakarta Special Province, 2008).

Preparations for early recovery activities began in the second week after the disaster. Initially, there was not much coordination among organizations involved, since, as was previously explained, the local government's capacity during the crisis was relatively low. However, the local government began to cooperate with the United Nations Development Programme (UNDP), which registered all participating organizations and grouped them into several clusters, each cluster dealing with a number of activities. The snowball of solidarity generated a kind of confidence amongst survivors, meaning that they felt they were no longer alone (Bantul Regency, 2008, p. 150). The social support provided by governments, international agencies and NGOs had been more than adequate. Therefore, what was next to be addressed was how survivors outside the reach of government aid networks, or who were otherwise marginalized, could access aid and financing schemes.

Bantul Regency government defined disaster victims in broad terms to include all residents who were living in Bantul, whether they were registered as residents of Bantul or not. This approach was used because in reality many people who live in Bantul had not formally registered themselves (i.e. they lacked formal ID cards) (Bantul Regency, 2008, p. 117). For example, students who came from out of town and went to universities around Yogyakarta, students of Islamic boarding schools, traders and migrant workers, residents of newly developed housing settlements, and so on. Togetherness is sustained by caring; therefore the expansion of the definition was based on the spirit of inclusiveness within post-disaster recovery and was primarily aimed at avoiding social conflict, because injustice may arise if some received help and others did not. In Javanese culture there is a principle: '*ojo menange dhewe, ojo benere*

dhewe, ojo butuhe dewe' (Bantul Regency, 2008, p. 144). The meaning is the principle stressing the importance of others, and prohibits putting oneself above others and acting egotistically.

6.4.2.4 Local Opinion Leaders

Opinion leaders played an important role in the initial recovery process in Bantul. The opinion leaders were drawn from amongst the people of Bantul and included political figures, religious figures, youth leaders, women activists, public or social figures, academic figures, and formal and informal leaders at the lowest levels of government, including villages, hamlets and neighborhood communities (i.e. RT/RW).

Just after the disaster, uncertainty prevailed, mainly as a result of unclear information, disrupted communication and poorly coordinated actions (Bantul Regency, 2008, p. 108). At this point, the role of opinion leaders was to communicate survivors' aspirations, whilst at the same time communicating the government disaster management programs in order to support community recovery. Furthermore, it has been claimed that there is a significant relationship between the communication empowerment of opinion leaders and the community group's performances (Badri et al., 2008). The opinion leader is a source of information or opinion for his/her followers. In disaster, they can thus help to optimize community participation, mediate, and even help reduce community upheaval (Badri et al., 2008, p. 56).

Initially, the implementation of the government's program was marred by an atmosphere of disappointment after the government broke a promise to give aid of thirty million rupiah to earthquake survivors (Widyanta, 2007). This disappointment then turned into a feeling of suspicion and distrust. The process of community-based reconstruction, which was expected to improve the sense of togetherness amongst citizens, was in fact accompanied by conflict that stemmed from miscommunication up to the problems that led to the lawsuit (Bantul Regency, 2008, p. 144). In addition, disappointment arose due to dynamics in the preparation of data and data collection, which involved economic and political interests (Bantul Regency, 2008, p. 129). Governments and the majority of international agencies and NGOs that have disaster management programs had taken advantage of the role of opinion leaders so that disaster management programs would be on track to meet targets and in line with community aspirations. The local leader's personality, the intensity of meetings and group cohesiveness would have an effect on recovery activities and on what had been

implemented in the provision of temporary or permanent housing programs (Badri et al., 2008).

A positive perspective is needed when viewing the growing problems. A negative outlook, arising from disbelief, suspicion, and the like, will be an impediment to the recovery process. Data collection involving citizen participation will, of course, be very risky if a negative perspective prevails. A positive outlook is needed, especially when differences arise in the calculation and presentation of data, so that any problem can be immediately addressed. It should be understood that the process of data collection was conducted in a crisis atmosphere, where every citizen strove to save themselves and their family (Bantul Regency, 2008, p. 118).

This was where the role of opinion leaders became important. Someone is affirmed as a local opinion leader by the community because of their empathy and social participation, meaning that the role has a real effect on social services. They may have access to communication with and information from officials involved in disaster management (Badri et al., 2008, p. 65). In addition, through the assistance of local opinion leaders, who also acted as program facilitators, decision-making and planning was carried out openly using a transparent process. This involved determining the beneficiaries and procedures for handling complaints and resolutions. This process ultimately resulted in increased accountability, community participation and a sense of community ownership of the recovery program (Sekretariat JRF, 2011, p. 27), which then finally accelerated the process and the potential success of recovery (Badri et al., 2008, p. 68).

6.4.2.5 Togetherness and Mutual Cooperation

Parents, elders and religious leaders can certainly be a reference to re-examine the history of the community, especially to find out how togetherness was built in the community. From what has been going on in Bantul, such as '*musyawarah*' (local meetings), '*gotong royong*' (mutual cooperation), mutual respect, and so on, it can be seen how predecessors tried to build, maintain and develop togetherness such that it became a cultural value embedded into the social capital of society.

The characteristics of rural communities in Yogyakarta and Central Java uphold values of mutual cooperation, solidarity and tolerance as essential forces in the implementation of rehabilitation and reconstruction efforts. The community as a whole was the party who best knew the social character and environmental needs of its

citizens (Tim Teknis Nasional, 2007, p. 15). Social problems, such as whose houses were built first or the pattern of direct aid distribution was decided by members of the community. The government in this case only acted as a facilitator who, amongst other things, was in charge of keeping the rehabilitation and reconstruction process on the right track, for example by maintaining the price and stock of raw materials and the technical principles of earthquake-resistant houses. In principle, community-based rehabilitation and reconstruction programs involve the broader community. This gives space for the community to determine the form of recovery that suits its needs. Community involvement starts from the regency, sub-district, village and hamlet level. Through this, there will be a sense of togetherness, mutual ownership and tolerance within the community. Despite its shortcomings, the concept will be more participatory, as it relies heavily on local wisdom as the main strategy of post-earthquake redevelopment (Kusumasari and Alam, 2012b). In this case, togetherness and mutual cooperation become key words (Tim Teknis Nasional, 2007, p. 38).

Post-disaster recovery in Bantul required the engagement of community members who were also victims of the earthquake. Especially in the case of Yogyakarta, the local government was still functioning, such that the active role of citizens might still be expected (Tim Teknis Nasional, 2007, p. 15). Public participation in the recovery phases in Bantul not only included the local community, but also multiple stakeholders, such as national and international NGOs, emergency services, religious groups, corporate bodies, associations, voluntary organizations, social activists, political parties and universities. However, it is local communities who should actively participate in disaster management efforts. This is the key to the success of the disaster recovery programme in Bantul (Kusumasari and Alam, 2012b, p. 360); cooperation and hard work became the foundation for recovery. Hard work was instilled with an understanding that assistance is temporary and limited, so to recover from the crisis required a productive work ethic and independence (Bantul Regency, 2008, p. 150).

After the earthquake, some survivors returned to live on their own land, while others lived in the village areas that had been designated as relocation sites (Sekretariat JRF, 2011, p. 20). In the process of reconstructing their homes and using government assistance or other sources of relief, the earthquake survivors often used roof tiles, door frames and even building materials from the houses they left behind. With a strong spirit of mutual help, some residents also donated their own resources to the more needy survivors in their neighborhood. For example, a public figure in Wonolelo Village, Pleret Sub-district, Bantul Regency, said 'for those who cannot complete their

wall construction, I allow them to cut my bamboo plant for them to use as a wall-making material' (Sekretariat JRF, 2011, p. 20). A sense of togetherness also emerged among disaster victims in their assistance to one another in rebuilding their houses. After one house was built, it was then another person's turn to have their house built. The high level of caring among survivors in the recovery phase minimised the potential for conflict in the community and hastened recovery (Kusumasari and Alam, 2012b, p. 361). The 'togetherness' idea was a series of voluntary collaborative actions which simultaneously emerged after the powerful earthquake (The Goverment of Yogyakarta Special Province, 2008)

6.4.2.6 Collaborative Work amongst Stakeholders

In Bantul, it was shown that efforts in the response and recovery periods were mainly supported by strong working relationships among the community, local government, and other institutions such as NGOs, religious groups, universities and the private sector (INT1, as documented in BAPPENAS, 2015b). These relationships did not emerge instantly during or after the earthquake. Hence building trust between the governments, public, private and non-profit organizations should have taken place prior to the crisis situation (Kusumasari and Alam, 2012b, p. 361), for the purpose of ensuring that information is shared, ensuring the development a willingness to collaborate, and so that shared values exist in the network.

The first collaborative work was started on the day of the earthquake. The head of Bantul Regency had already involved many international and national NGOs and donor agencies. Under the coordination of the United Nations, these stakeholders supported local government with efforts directed towards health, nutrition, shelter, water and sanitation, telecommunications, logistics, education and farming. Gradually, when all the local government units had been coordinated, the disbursement of aid became more effective. By that time, all donations within the emergency period were coordinated by the Regency Unit for Disaster Management (i.e. SATLAK). Since then, integration and mobilization have been managed effectively between all stakeholders. This integration and public participation continued even after the recovery stages were complete (Kusumasari and Alam, 2012b, p. 362).

Since 2000, the government has made a great effort to involve the community in Bantul's development. For Bantul's local government, community participation can be understood as the willingness of the public to express their opinion and provide

recommendations to the government, as well as get involved in local government programmes; local government in turn uses that advice to consider how to enhance the quality of public services. Okazaki and Shaw (2003) have stressed that participation and ownership by local people can bring about a sense of achievement; furthermore, their research shows that the importance of public participation is the increasing acceptance of disaster recovery programs amongst survivors as beneficiaries of the programs. In the case of Bantul, the existing community groups, which possess a high level of solidarity, sense of togetherness and shared goals, made collaboration in support of the recovery process very crucial (Badri et al., 2008, p. 69). In addition, the persistent support of local opinion leaders for the government recovery program has been shown to smooth and accelerate the recovery process.

Volunteers, community-based organizations, and other non-governmental organizations can also be instrumental in leading community transformation following disaster; in particular, they can assist vulnerable populations whose needs are not met by more conventional disaster-assistance programs (Schwab, 2014, p. 135). By placing the local community at the forefront of the recovery process, Bantul has aided the success of the rehabilitation and reconstruction process (Kusumasari and Alam, 2012b, p. 362). Furthermore, this approach has also minimised the potential conflict and risk that may arise between the community and the government. In terms of disaster response and recovery, the former head of Bantul Regency stated that the government has acknowledged the power of public participation in ensuring the smooth running of disaster response and recovery programmes (Kusumasari and Alam, 2012b, p. 360).

6.5 Discussion of the Essentials of Disaster Recovery Governance

Based on our analysis, we can see that leadership, solidarity, togetherness and mutual cooperation, local opinion leaders, local government capability, and collaboration among stakeholders in Bantul were determinants of success and accelerated the recovery programmes that the local government and other actors had implemented. Most of these were worked out under the concept of network and social capital, for instance gotong royong, which means cooperation within and between social networks. These social capitals, along with cultural influence and man-made systems, such as communication systems, transparency and accountability, have strongly encouraged the community to become an essential part of disaster recovery programmes. For that purpose, the following section is dedicated to unpacking the underlying principles of the abovementioned network and mechanisms within Bantul's recovery process.

6.5.1 Social and Cultural Resources

The Bantul government has realized that disaster response and recovery tasks are immense and are beyond their capacity as an organization. Therefore, the presence of social resources in society is very beneficial, especially for implementing government programs. In this case, the social resources in communities have supported the government in obtaining competitive benefits and accelerating the disaster recovery process. The social resources referred here consist of local cultural values and local wisdom rooted in Javanese culture (Bantul Regency, 2008, p. 30). The Javanese people of Bantul in particular and the people of Yogyakarta in general, both long before and after the earthquake, have lived with a sense that life's burdens are shared, an acceptance of overwhelming situations (in Javanese: *nerimo*), a sense of trust and obedience to leaders or community leaders (in Javanese: *nerimo ing pandu*) and also have a sense of togetherness, kinship, mutual sharing and cooperation (i.e. *gotong royong*). According to Putnam (2000), the existence of these kind of resources in a community can facilitate large-scale, coordinated actions. Interestingly, most of the social and cultural resources of the Bantul people have been owned and run for hundreds of years, since the era of the Sultanate of Yogyakarta, which was influenced by Hindu-Buddhist belief and culture and then replaced by the period of Islamic civilization until now (Kumara and Susetyo, 2008, p. 131). Thus, since then, the value of culture and local wisdom has become the main modality in the dynamics of the lives of Bantul and Yogyakarta people.

After the earthquake, at every crossroad, the local government placed many banners containing statements of local wisdom (Kumara and Susetyo, 2008, p. 131). At that time, the local government had been fully aware that social resources were a valuable thing that should be fueled and used as the driving forces of the recovery process. As an illustration, the villagers of Wonolelo Village in Pleret Sub-district, automatically applied the tradition of mutual cooperation (i.e. gotong royong) when solving problems affecting their village after the earthquake (Sekretariat JRF, 2011, p. 20). With the tagline *'Bantul Bangkit'* (Bantul Revive), the government of Bantul Regency emphasized the recovery of the victims' productivity, so that lives and livelihoods could continue as normal. The concept of 'Bantul Bangkit' was not derived from other theoretical concepts but from within the community itself, embedded as local wisdom for hundreds of years, since the early Hindhu-Budhist civilizations in Indonesia. Therefore, in this case, it is worth mentioning that the local government have benefited from this social resource and used it as a means to remind people to get up and stand on their

own two feet. A common understanding that the government tried to build was that the assistance received should be seen as an initial stimulant to encourage sustainable actions by the community; at some point the recovery needed the involvement of the people themselves, who should thus be willing to strive and work hard in order to rise up from their grief (Bantul Regency, 2008, p. 122).

On the other hand, based on recent research (Nurhadi, 2015, p. 115), the social capital of the poor has been increasing, as shown by, amongst other things, the stronger social ties between community members and the widening of social networks with local decision makers.

> *Neighbors, relatives and friends are increasingly concerned and show greater solidarity, offering assistance to lighten the burden of reconstruction of the house. As a result the practice of mutual cooperation is getting stronger (ibid.)*

This condition illustrates the importance of the social capital that already exists in society. When the crisis happened, social capital could be reactivated and became a cost-reducing factor which accelerated the recovery process. In this regard, the right choices from the government in determining and implementing the portfolio of programs and activities were very influential. In short, in the disaster recovery period, these social and cultural resources were very important, since the local community knows best. The government's role was to re activate this embedded capital in society, and to use it to smooth the delivery of information and the implementation of programs. Furthermore, these aforementioned resources have not only accelerated the recovery in Bantul, but also minimised potential conflict in the community (Kusumasari and Alam, 2012b, p. 361).

6.5.2 A Well-Connected Community

The impact of the disaster was not felt equally and evenly by all victims. Some groups in the community suffered a bigger impact than others. One of the causes behind this is poverty. According to a recent study in Bantul (Nurhadi, 2015, p. 103), the richest people suffered fewer disasters because of their ability to reduce the impact of disasters by strengthening their home structures and because they could use their assets. On the other hand, the poor can reduce the impact of disasters by maximizing networks and working together to minimize the cost of building a house (gotong royong). The most vulnerable are those in between these two groups, having no sufficient assets to be spent on their home or business improvement, and no social

networks to be accessed either. Unlike the poor, who can save on labor costs related to housing reconstruction by relying upon voluntary reciprocal assistance, the middle classes found it difficult to minimize costs because all costs must be paid in cash.

In a study of fishermen in West Java, Sunarti et al. (2013) suggests that proximity to social networks was an indicator of economic vulnerability. Other indicators include: the number of family dependents, the number of sick family members, per capita income, access to capital, access to business opportunities, education level, access to information and the need for social assistance. Activities that may be helpful to expand social networks, include participation in local associations, including professional associations, businesses and cooperatives. The higher the involvement in local organizations, the more open the opportunity to get assistance (Sunarti, 2013).

A well-connected community in Bantul consists of strong ties within groups and networks between groups of communities. The performance of groups of communities in Bantul, according to Badri et al. (2008) is influenced greatly by participation, division of labor, communications and cooperation. The level of information disclosure and cooperation within these groups reached 75.1 percent and 65.7 percent, respectively (Badri et al., 2008, p. 62). This is in line with the claim of the respondent (INT6, as documented in BAPPENAS, 2015b), as follows:

> *Yogyakarta communities have a great sense of kinship and ownership (towards the program). If we provide the same funding to build, they can move forward in such a cooperative way. So the impact of the policy can be different, I believe it would ultimately depend on the community itself.*

Although the presence of assistance has helped to reduce the burden of victims, the most important thing is building the solidarity that allows for the mobilization of the social energy of the community (Bantul Regency, 2008, p.32). The solidarity embedded in a well-connected community has provided communities with access to other available resources (i.e. those of other members), either in the form of private donations, assistance or access to other financing (Sekretariat JRF, 2011, p. 20). As an illustration (Bantul Regency, 2008, p. 113), on the fourth day after the earthquake, Maryono, the head of the neighborhood association of RT 5, Ngibikan, Canden, Jetis, assisted by architect Eko Prawoto, coordinated the community to build 65 houses worth 650 million rupiah with assistance from KOMPAS (i.e. CSR fund from newspaper company). In this case, residents who were connected to one another were able to enjoy the resources that were sought or obtained through other members' networks.

6.5.3 Partnership and Empowerment

Given their complexity, in crisis situations conventional mechanisms cannot be deployed. It takes solid teamwork, partnership and networks based on trust and mutual respect. In the context of disaster management and recovery, the Bantul government sought to form a solid working team that was willing to work based on a vision and mission oriented towards improving the quality of services to the survivors and to accelerate the recovery process (Bantul Regency, 2008, p. 141). Therefore, the partnership approach was used in order to create synergies and avoid new problems along the way.

Lessons learned from the Aceh tsunami disaster recovery were the low level of partnerships between BRR - as the ad hoc institution appointed at the time- with local governments (INT6, as documented in BAPPENAS, 2015b). As an organization with full authority, BRR neglected to engage the local governments in the recovery programs. As a result, the local government's sense of ownership of these central government recovery programs was relatively low, and finally ended with a less smooth transition process (i.e. exit strategies) from BRR to local governments in regard to the post-disaster development programs and the assets maintenance of the infrastructure built. The same should be of concern to international agencies and the donor communities in carrying out their temporary project in the local context.

In addition, the involvement of various parties, beside bringing understanding and support, also meant that groups could supervise each other, for example when it came to the use of funds and quality of activities (Sunarti et al., 2013). Furthermore, participatory planning is recommended because it can accommodate the views, considerations, interests and needs of the community, many of which became the consideration of all stakeholders when implementing activities in the communities, villages and sub-districts. Partnerships that places the community as a key partner means that the problems that arise throughout the process can be anticipated and responded to thoroughly, in accordance with agreed upon timelines and the achievement of agreed upon targets. Community participation and initiatives were also essential for the recovery process in order to strengthen and rely upon local strengths. The government in this case was required to be more flexible to the situation and needs of the people, for example in the effort to empower poor families after the disaster politically, economically, socially and culturally (Bantul Regency, 2008, p. 143).

Participation should also be meaningful, such as the empowerment that was implemented by a group of women in Imogiri. It was claimed that they had successfully demonstrated toughness as pioneers in the post-disaster recovery process. Through patience and diligence and various innovations, the women were able to channel positive energy to the surrounding environment such that they were able to immediately rise from adversity (Yusuf, 2014). The community empowerment approach focuses on the importance of an autonomous local community as a system that organizes itself and is positioned as the subject of development (Setiana, 2005, as cited in Badri et al., 2008). Furthermore, this can be seen in a survey of a 'resilient women strategy' (Yusuf, 2014), which described the role of women survivors after the earthquake in Bantul. They were active, creative and innovative and were gradually re-establishing their lives by resuming their economic activities, either through independent enterprise or collective business. Many either intended to open new joint businesses or continue with old ones.

The government was fully aware that the main driver for recovery is the people, not the government. The restoration of the people's ability, by itself, would become an engine in the process of accelerating recovery. Thus it was the obligation of the government to provide programs and activities that could facilitate and support the process of recovery through people empowerment. This has been implemented in earthquake resistant housing support schemes through community-based schemes (i.e. *PokMas*). Besides intending to provide economic benefits to the people, this effort actually has other strategic aims: 1) as a vehicle to strengthen social capital, such as mutual cooperation and togetherness; and 2) as a means to form a 'new family' (i.e. P*okMas*), to improve the quality of the social network, offer mutual help and mutual sharing and provide protection to the weak (Bantul Regency, 2008, pp. 142-3).

6.5.4 Communication, Transparency and Accountability

Sociologically, disasters disrupt people's lives and livelihood, or even change the existing social capital in communities. As disaster strikes, fear and distrust may exist between survivors in a society, and between the survivors and the government regarding the ability of the government to protect its citizens (Maarif, 2010). An illustration is the implementation of the recovery program, which started in an atmosphere of disappointment, especially after the government broke a promise to offer assistance of around thirty million rupiah (later decreased by 50 percent) (Widyanta, 2007). This caused distrust, which partly turned into suspicion. In addition

to this, in terms of data preparation, there was a difference in the results of the data collection process, which eventually caused a conflict of interest at the community level. In addition, the differences occurred because of perceptions regarding aid distribution: who got priority, who benefited and who got harmed because of decisions made. In the context of disaster, one may focus on how distrust emerges between the disaster victims and the government's ability to protect its citizens in the event of a disaster. However, distrust also appeared in the midst of society regarding which negative views might be dangerous and cause internal conflict, for example, when a person with his/her network capability controls assistance for his or her own group (Maarif, 2010, p. 2). This asymmetric information caused distortion in the recovery implementation and, as a result, victims who had little access to resources lived in poorer conditions.

In principle, communication is the transfer of information from the sender of the message to the recipient of the message with the aim of achieving mutual understanding between the two parties (Badri et al., 2008). Communication is influenced by clarity and consistency, and has five elements: communicator, message, media, *communicatee*, and effect (Effendi, 2004, as cited in Badri et al., 2008). The government has tried to be present to give answers to any questions raised in the society. In the event of a disaster, the existence of social capital facilitated information flow between and amongst individuals (Lin, 2002). However, not all people's problems can be solved by the government. That is why an open attitude from the government was required, so that the people could understand the limits of the government's ability, which in turn would encourage self-reliance through the cooperation of citizens (Bantul Regency, 2008, p. 142).

According to a study of 80 respondents in Bantul (Kumara and Susetyo, 2008, p. 147), the respondents generally (70 percent) interpreted and correlated the disasters with divine (god) matters and destiny. One form of coping with the recovery phase is to trust the direction of religious and community leaders, as they brought peace of mind and viewed the disaster event in a positive light (Kumara and Susetyo, 2008, p. 146). Therefore, the role of communication can be effective if supported by the role of respected figures from the religious community. In addition, opinion leaders may also take the form of public figures, community leaders and informal leaders, and they all have the ability to influence others.

Furthermore, the people needed adequate socialization, which was conducted several times in various circles, either in the circles that could support the process, or in the circles that could inhibit the implementation of planned activities. Besides face-to-face meetings in community groups, other effective means for socialization were through newspapers, radio and television broadcasts. Most respondents of Bantul (50 percent) admitted that the information regarding aid disbursement was received from radio broadcasts, while information regarding disaster management policy and updates on the progress of rehabilitation and reconstruction was widely received from newspapers (51.9 percent) and television (26.2 percent) (Badri et al., 2008, p. 61). After socialization, there is a need for careful planning and measurable targeting with the resources available, as well as a strict, consistent and persistent monitoring and evaluation (Sunarti et al., 2013). Thus, from the very beginning, the principle of transparency should be placed as the foundations, which later on becomes a means to achieve accountability among stakeholders.

For a program that was large in scale, it was certainly difficult to ensure that the guidelines set were actually met in reality. Therefore, after the reconstruction program, the Bantul Regency government launched a reconciliation program on February 16th 2008. Reconciliation is, 'the way of building togetherness or building a life based on mutual respect and trust, as well as humanitarian values' (Memoir of Drs. HM Idham Samawi, as cited in Bantul Regency, 2008, p. 131). The determination of the Bantul Regency government to immediately develop reconciliation and build social reintegration can be seen as awareness that the Bantul revival was unlikely to be achieved, much less sustained, without social resources mobilized in or between strong social networks. It was not a pseudo-harmony to be built, or a compulsion towards togetherness, but a kind of harmony for progress or mutual cooperation between people based on a spirit of humanity, mutual trust and respect.

6.6 Concluding Remarks

According to a calculation of damage and loss conducted by BAPPENAS, defective public assets totalled 2,763 trillion rupiah, or 11.3% of all assets (Goverment of Indonesia, 2006, p. 12). The rest was comprised of damage suffered by personal assets or individuals. This means that earthquake damage is not necessarily the sole responsibility of government as a whole, but individuals should be given major roles and responsibilities. Communities should be prepared to be at the forefront of disaster

risk reduction, management and recovery. The network analysis shown in Figure 6.1 and 6.2 demonstrates the robustness of the underlying network.

Actors' collaboration as identified in Table 6.2 provides a glance of the insight mechanisms found in this chapter: leadership, solidarity, togetherness and mutual cooperation, local opinion leaders, local government capability, and collaboration among stakeholders. All of these mechanisms were explained in depth according to the four underlying principles of (1) social and cultural value; (2) a well-connected society; (3) partnership and empowerment; and (4) communication, transparency, and accountability.

However, the results of a rapid evaluation at the beginning of this chapter indicate that the economic recovery received less attention than the restoration of housing and infrastructure (Sekretariat JRF, 2011). In late 2008, it was claimed that there were still many businesses that were not as fully operational as before the earthquake (Resosudarmo et al., 2012). Some of the contributing factors, among other things, include the need for capital, damage to production facilities, damage to building premises and a breakdown in access to the market. These conditions require a strategy to accelerate the economic recovery of communities and the local economy through the active involvement of the business community so that the interventions remain on the right track. This will be discussed in detail in the next chapter.

Chapter 7. In-Depth Analysis from Individual-Local Perspectives: Risk Perceptions, Implementations and Strategies to Revive the Bantul Regency Economy

7.1 Introduction

The histories of disaster occurrences have shown that one of the most demanding aspect of the recovery process is that of restoring the economic losses (Flynn, 2007). From this point of view, losses refer to the loss of development investment, by the government, the private sector, and society in general (Sunarti, 2013). This is because the catastrophic events eliminate some of, or even entire, livelihood assets which then require a relatively long time to be gathered again. Furthermore, experiences of loss are also interpreted as the decline of the community's capacity level, and on the other hand, represent an increase in the vulnerability of the community (Sunarti et al., 2013).

When an earthquake, measuring 5.9 on the Richter scale, wreaked havoc on the Bantul region on 27 May 2006, it caused an economic downturn (International Organization for Migration, 2011). The data shows that the damage to economic and infrastructure facilities in Yogyakarta and Bantul reached a value of more than US$ 3 billion (Goverment of Indonesia, 2006; Sekretariat JRF, 2011, p. 15). This equals more than half of the Regional Gross Domestic Product (RGDP) of the preceding local government financial year (Goverment of Indonesia, 2006). Based on investigation at the regency level, it was recorded that there were 1,328 craftsmen and 10,781 traders who needed additional capital due to loss of business assets. In addition, there were 29 traditional markets damaged, causing a slowdown of local economic development (data recorded per 7 June 2006, Bantul Regency, 2008, p. 116). As is widely known, Bantul's craftsmen and small business enterprises are part of the Yogyakarta tourism industry, due to most of the handicraft in Yogyakarta Province being supplied by Bantul's craftsmen (Bantul Regency, 2008).

The tourism sector is widely recognized as one of the engines of economic growth in developing countries and is highlighted as one of the strategies for reducing disparity between regions (Jenkins, 1980). With its complex characteristics, the tourism industry is a considerably labour-intensive industry which provides many opportunities for various local organizations and small businesses to grow (Dredge, 2006). Tourism has a

multiplier effect and links to many other sectors within a nation's economy, with one of the links being between tourism and shopping behaviour. Shopping is indeed the essential activity in the tourism industry and has significantly contributed to the local micro and small retail businesses (Coles, 2004; Timothy, 2005). Furthermore, the existence of micro and small enterprises has also been described as the backbone of a developing economy (Tambunan, 2009).

Interestingly, the Bantul and Yogyakarta provinces managed to recover within a period of two years (i.e. 18 months, Tim Teknis Nasional, 2007), with good signs of recovery identifiable much earlier. The government reports (Bantul Regency, 2008; Goverment of Indonesia, 2010), together with international agency reports (Sekretariat JRF, 2011; International Organization for Migration, 2011), noted this tremendous progress. The activities indicating local economic restoration include, among others, livelihood recovery, re-establishment of micro, small and medium enterprises (MSMEs), facilitation of access to finance, upgrading of work premises, and redeveloping sector bases of the local economy.

The dynamics of Bantul's economic development resulted in the structural transformation of the Bantul economy. Along with this, there is also a shift in livelihoods in Bantul Regency with the greatest strengthening among the MSMEs (see also Chapter 3, Sub-section 2.3.). Based on data from Industry, Trade and Cooperatives , the establishment of MSMEs alone from 2010 to 2012 has added value and investment worth up to 500 billion rupiah (Bantul Regency, 2013). Starting from these facts, we believe Bantul Regency and Yogyakarta Province offer many lessons to be explored.

This chapter explores the following research question: 'How did the local community actors in Bantul Regency–Yogyakarta Province, initiate, cooperate and network to revive the local economy, at the level of micro, small and medium enterprises (i.e. MSMEs)?'. Thus the chapter aims to uncover the recovery process required after a disaster strikes and to investigate the MSMEs on the platform of the tourism industry and their expectations for future challenges. Although there have been many studies conducted on the economic impact of disasters (Skoufias, 2003; Flynn, 2007), research which focuses on micro and small businesses and their interconnections with the tourism sector in the post-disaster context is still very rare: in particular, research focused on the internal view of how they actually recover, their expectations and the implications for future challenges.

In addition to the theoretical overview of shopping tourism and its links with MSMEs, methods, and an overview of the case study, this chapter will be presented in three content sections, as follows: (1) the landscape of MSMEs in Bantul Regency and Indonesia; (2) post-disaster recovery governance for MSMEs and the local economy of Bantul Regency, including discussion of the network and findings regarding risk perceptions and implementations; and (3) local economic recovery in Bantul Regency, including discussion of the lessons and strategies for a local economic revival. Lastly, the sixth section contains concluding remarks.

7.2 Research Approach

In the following sub-sections, the research approaches will be further described: underpinning theories, methods, and finally, an overview of handicraft clusters, which serves as the background context of the analysis in the next three sections.

7.2.1 Underpinning Theories

In many cases, the disruption caused by the disaster to local people's lives was devastating (Arendt and Alesch, 2015), resulting in fundamental problems for people's livelihoods and for many sectors within the affected regions (Phillips, 2009), including the tourism sector (Schwab, 2014). Learning from a series of past disasters, one type of loss that requires serious anticipation – in addition to the death toll and injuries – is the loss and/or destruction of economic assets or livelihoods. This is important because the economic disruption will have other impacts and prolong the post-disaster recovery process. Subsequently, the longer the recovery time, the more expensive the recovery cost (Flynn, 2007).

MSMEs have a strong influence on many economies in the world. It is claimed that they contribute significantly to job creation, social stability, and the economic welfare of regions (Tambunan, 2009). The existence of MSME clusters within a region is also believed to encourage the formation of tourism patterns, since clustering is believed to be a requirement for innovation and community capacity building (Dredge, 2006). This is in line with Porter's (2000) clusters concept, in which industries tend to agglomerate in one area to get the benefit from the connection of spatial locations. His work, in particular, explains a cluster as a geographical concentration of industries or business entities interconnected within a specific location.

There have been many studies exploring the interconnected ideas between shopping behaviours and tourism (Coles, 2004; Timothy, 2005; Swanson and Timothy, 2012; Azmi et al., 2016). Buying souvenirs from handicraft shop clusters or shops near tourist destinations has indeed become the essential activity of tourists. Swanson and Timothy (2012, p. 490) define a souvenir as a 'symbolic reminder of an event or experience', or it can be described as tangible proof of the intangible experiences of leisure sensations. Although the shopping clusters still need to integrate with other tourist attractions (e.g. historical or natural attractions), they have begun to be considered a tourist destination in itself (Getz, 1993). This is because most tourists' trips are considered incomplete without a shopping activity; furthermore, buying things that represent the place they visit has been assumed to be taking home mementos of vacations (Timothy, 2005).

Shopping tourism clusters, which are developed in a particular small geographical area, are called tourist shopping villages (Getz, 1993). However, Getz (1993) further explains that this small cluster retailing activity could be within a small town or village, though usually located near other tourist routes. Today, tourists might buy many other things besides handicraft; however, a unique handicraft item remains one of the favourite souvenirs bought while travelling (Swanson and Timothy, 2012). The items chosen by tourists include arts and crafts, gemstones and jewellery, antique products, leather goods, housewares, pictures or statues of landmarks of tourist destinations, collectible items (e.g. mugs, key rings, fridge magnets, postcards), food originating from the destination area, and local clothing products (Timothy, 2005; Swanson and Timothy, 2012; Azmi et al., 2016).

Souvenirs can also be viewed as commodities within the tourism industry which are produced and distributed through supply chains (Coles, 2004; Swanson and Timothy, 2012). This, accordingly, will surely involve MSMEs as the prime movers of shopping tourism. As is widely known, most tourism is based on a network of small and medium-sized tourism enterprises and local organizations which provide all types of tourism products, services and supporting policies (Dredge, 2006). In addition to this, Lanfant (1980, as cited in Nash, 1996, p. 103) strongly believed that tourism as an industry goes beyond the network of local, regional and even national boundaries or territories. Hence the tourism industry, including many MSMEs, is indeed a social fact worldwide (Nash, 1996).

The development of tourist destinations has also been said to facilitate the growth of MSMEs. It is claimed that tourism offers an opportunity for people to start-up

businesses which will ultimately benefit the development of the destination regions, because the shopper will stay longer, meaning a higher per capita spend (Getz, 1993). To sum up, the tourism industry is complex and involves the tangible and intangible experiences of a tourist destination; in this case, the intangible tourism could take the form of sensations of shopping during travelling. Although the shopping preferences of tourists might vary across different places, shopping has already been broadly recognized as a part of leisure activities (Getz, 1993; Timothy, 2005).

7.2.2 Methods

Chapter 7 focuses on Bantul Regency, especially on the sub-districts that have handicraft industries and shop clusters. The analytical unit used in this research is micro and small-scale business entities (called MSMEs), and almost all of them are home-based industries. This decision is based on the fact that the local economy has been heavily influenced by small-scale economic activities (which will be explained further in Sections 2.3 and 3.2). The sub-district samples were chosen by a purposive sampling method. Sub-districts were selected that are located at high and medium risk level areas but at the same time included more developed handicraft industrial clusters, namely the Sub-districts of Bantul Sewon, Kasihan, Banguntapan, and Imogiri (refer to Chapter 3).

This study applies a mixed-methods approach of descriptive statistical analysis (using questionnaires), social network analysis (using UCINET and Netdraw), and thematic content analysis (desk study and interview), from the following data: 1) interviewing key actors in the related fields; 2) a questionnaire survey of 100 respondents in the selected sub-districts; complemented by 3) a literature survey of government policy documents and non-governmental disaster-recovery related project reports. All the questionnaire respondents are micro and small-scale business entities that were chosen by random sampling within the selected sub-district samples.

7.2.3 An Overview of the Case Studies: Handicraft Clusters

Bantul Regency is part of the Special Province of Yogyakarta which covers four regencies and one city. Bantul Regency has an area of 506.85 km^2 and administratively it is divided into 17 sub-districts (*kecamatan*), 75 villages (*kelurahan*) and 933 hamlets (*dukuh*) (Bantul Regency, 2008). Based on population registration data, the population of Bantul Regency has grown from 808,366 people (2005) to 911,503 people (2010)

and then to 917,511 people (2015), with the population trend increasing by 1.32 percent per year (BPS Jogjakarta Province, 2016).

Geographically, tourism in Bantul Regency is closely linked to the City of Yogyakarta's tourism industry. This city is the third most famous tourist destination after Bali and Lombok and is well known as a city of culture and education. Yogyakarta attracted on average 1,139,922 visitors during the period 2004-2008 (Dinas Kepariwisataan Jogjakarta, 2008), but this number does not include the arrival of students from all over Indonesia due to the many universities within this area. Also observing the surrounding area, there are links between its natural beauty, cultural values and historical sites as well as local home-based industrial products which have been identified as the strength of the province of Yogyakarta's tourism industry platform.

When the earthquake struck Yogyakarta, MSMEs were the most severely affected, and at the same time they had the fewest resources with which to recover their businesses and livelihoods (Sekretariat JRF, 2011). As a result, the impact on the local economy can be clearly perceived, primarily due to the large number of MSMEs and handicraft clusters in Yogyakarta and, in particular, Bantul Regency. There are 72 handicraft clusters in Bantul (Bantul Regency, 2008, p. 58) which are not homogenous from one sub-district to another (as has been shown in Figure 4.3 in Chapter 4), and in which most of the sub-districts already have their own featured or typical products.

Some of the well-known tourist shopping platforms in Bantul Regency include various clusters (Bantul Regency, 2009b): Kasongan (pottery craft, 441 units of MSMEs; ibid., p. 16), Manding (leather-based craft, 55 units of MSMEs; ibid., p. 38), and Wukirsari (batik craft, 414 units of MSMEs; ibid., p. 28). The evolution of becoming a tourism destination for those village-based handicraft clusters took several years. In Bantul Regency, the involvement of the village community in proposing their clusters as tourism destinations is very important. The business incubation process has been tiered upwards, from the village community to the regency government level (Saputra and Rindrasih, 2012). Box 7.1 describes the profiles of home-based and small industry entities in Bantul Regency.

Box 7.1. Shopping Tourism Clusters: The Kasongan, Manding and Imogiri

The Kasongan cluster is located at Kasongan Hamlet, Bangunjiwo Village, in the sub-district of Kasihan. The Kasongan cluster is the centre of the pottery industry in Bantul Regency. This tourism village produces household products made from clay. Based on the observation, this pottery cluster is relatively developed in comparison with other similar shopping tourism clusters. Based on the interview, there are two types of actors within this cluster; the first is the independent craftsmen who sell the product to the shops and the second is the craft maker that works for the shop's production. The first type of craft maker is contracted by the showroom to supply the product for them. In the early 1600s, the pottery produced was still limited to kitchen utensils. Now, the featured product of Kasongan pottery has been innovated, likewise the jar products that started to develop since 1986. The product has been exported to Australia, the US, the Netherlands, Switzerland, Canada, Spain, Italy, Guam, New Zealand, Japan, Malaysia, Belgium and Germany.

The Manding cluster is located on Parangtritis Street, at Sabdodadi Village, Sub-district of Bantul. This place has many leather craftsmen and shops selling leather products such as jackets, shoes, bag, belts as well as varied accessories made of leather like picture frames and key rings. Manding, as one of the centres for the leather craft industry in Bantul, has around 40 traditional leather industries involving hundreds of workers. The product has been sold to the Netherlands, Malaysia and Japan.

The Batik Wukirsari cluster is located in Wukirsari Village, Sub-district of Imogiri. Batik is important in the cultural heritage of Indonesia; in the present, batik craft is increasingly widespread and has been developed throughout Indonesia. The diversity of motifs and color elements owned by each region is very diverse, in accordance with the characteristics of the region itself. Batik tulis craft is traditional batik craft, created by using canting as a tool to attach the wax on the cloth, with certain kind of motifs, such as motifs parang, sidoasih, sidomulyo, sidokaton and nitik.

Source: summarized from Bantul Regency (2009b); Bantul Regency (2014a); Bantul Regency (2014b); and Raharjo (2015b)

7.3 The Landscape of Micro, Small and Medium Enterprises (MSMEs) in Bantul Regency and Indonesia

This section provides the background regulation and information for this empirical chapter: definitions and the roles of MSMEs according to regulations, and the landscape of the local economy and MSMEs in Bantul Regency. The key finding in this section is that the earthquake that hit Bantul and Yogyakarta in 2006 proved to lead to problems for the MSMEs and their business continuity. This was mainly due to *disruption of the production process to serve the demand*. Based on the findings, the disruption to the production process was caused by (1) the damage of production facilities and infrastructure; (2) the shortage of manpower; (3) the damage of transportation and basic infrastructure; and (4) the non-physical damage aspect.

7.3.1 Definitions, Regulations and the Roles of MSMEs in the Indonesian Local Economy

As the main reference for understanding MSMEs, the definitions stated in Law 20/2008 on SMEs is used as a reference in this thesis, as follows (Goverment of Indonesia, 2008c):

— The micro business is a productive business owned by an individual and/or individual business entity fulfilling micro business criteria. The criteria for a micro business are as follows: a) a net worth of at most IDR 50,000,000.00 (50 million rupiah) excluding land and building of business premises; or b) annual sales of at most IDR 300,000,000.00 (300 million rupiah).

— The small-scale business is a stand-alone productive economic enterprise undertaken by an individual or a business entity that is neither a subsidiary nor a branch of a company, nor becomes part of a medium-sized enterprise or a large business, either directly or indirectly, but fulfils the small business criteria. Small business criteria are as follows: a) a net worth more than IDR 50,000,000.00 (50 million rupiah) up to a maximum of IDR 500,000,000.00 (500 million rupiah) excluding land and building of business premises, or b) having annual sale proceeds of more than IDR 300,000,000.00 (300 million rupiah) up to a maximum of IDR 2,500,000,000.00 (two billion 500 million rupiah).

— The medium-scale business is a stand-alone productive economic enterprise, conducted by an individual or a business entity which is neither a subsidiary nor a branch of a company, nor part of a small business or a large business with the amount of wealth net or annual sales proceeds stipulated as follows: a) net worth of

more than IDR 500,000,000.00 (500 million rupiah) up to a maximum of IDR 10,000,000,000.00 (10 billion rupiah) excluding land and building of business premises; or b) annual sales of more than IDR 2,500,000,000.00 (two billion 500 million rupiah) up to a maximum of IDR 50,000,000,000.00 (50 billion rupiah).

— The large-scale business is a productive economic enterprise undertaken by a business entity with a net worth or annual sales total greater than the medium enterprise, including state-owned or private national enterprises, joint ventures and foreign businesses engaging in economic activities in Indonesia.

In addition to this, Bank Indonesia (BI, i.e. the Central Bank of Indonesia) through the decree of its director, provides an overview of the characteristics of MSMEs. For micro enterprises these are, among others (based on SK Dir BI No. 31/24/KEP/DIR dated 5 May 1998): 1) a business run by the poor or near poor; 2) mostly a family-based ownership business which relies heavily on local resources and simple technology; and 3) the kind of business field that is easy to penetrate (both exit and entry). Furthermore, it characterizes medium business (based on SK Dir BI No. 30/45/DIR/UK dated January 5, 1997) as including total assets of less than IDR 5,000,000,000.00 (five billion rupiah), assets less than IDR 600,000,000.00 (600 million rupiah) excluding land and buildings premises, and annual turnover of less than IDR 3,000,000,000.00 (three billion rupiah).

Despite the above-mentioned definitions, for practical reasons within the survey, Badan Pusat Statistik (BPS, i.e. the Indonesia Central Bureau of Statistics) implements other standards for MSME classification: that the small-scale business has a workforce of 5 to 19 people, while the medium-scale enterprise has a workforce of between 20 to 99 people.

Sri Adiningsih, the well-known Indonesian economist, has predicted that the existence of MSMEs in Indonesia would develop especially after surviving the 1998 economic crisis (2004 as cited in Saputra and Rindrasih, 2012). Moreover, she claimed that the macroeconomic situation influences the competition, growth and vulnerabilities of MSMEs. According to BPS (BPS, 2013b), in 1997 there were 39.7 million MSMEs in Indonesia; however, this number had significantly increased by 2013 to 57.9 million MSMEs. This number created jobs for more than 114 million Indonesian people in 2013; this means that number almost doubled from the data of 1997. In Indonesia, referring to the proportion of the number and variety of business types, the penetration of MSMEs has been very evident across various economic sectors. In rural areas,

MSMEs have been known as an alternative to fill the gap in the economic strata of rural households, especially for those who have inadequate agricultural land. MSMEs are mostly focused on trade, food production, textiles, garments, wooden crafts, wooden manufacturing, minerals, and metal products.

Nevertheless, there is a mistaken assumption that MSMEs are a temporary transit for workers who have not been able to enter the formal sector of the workforce. But this assumption is no longer acceptable, because their existence is now considered an engine of economic growth due not only to the MSME sector's ability to absorb labor, but also its potential revenue generated through exports. According to BPS (BPS, 2013b), in 1997 the export value from MSMEs was only 39,277.07 billion rupiah, but within 15 years the number has reached 182,112.70 billion rupiah with its contribution to gross domestic income reaching 1,536,918.80 billion rupiah. This leads to the conclusion that MSMEs are very important for national economic development, in which they have become the reliable flagship of non-oil exports and industrial supporters.

7.3.2 The Landscape of the Local Economy and MSMEs in Bantul – Yogyakarta: Before and Just After the Earthquake

In Bantul, sectors supported by MSMEs have contributed significantly to PDRB (i.e. GRDP) postures. Based on preliminary data (2001-2005), which is processed through LQ analysis, the existing leading base sectors in the Bantul Regency supporting local development include the following: 1) the agriculture sector; 2) the manufacturing industry sector; 3) the trade sector, including hotels and restaurants; and 4) the services sector (Basuki, 2008). Furthermore, according to the 2005 data, 26 percent of the population worked in the agricultural sector, while 19 percent worked in industries and 21 percent in trade and commerce. Interestingly, in 2010 this combination had shifted toward trade, hotels and restaurants (26.54 percent), while the section of the population working in agriculture-based activities decreased to 19.17 percent (Saputra and Rindrasih, 2012, p. 55). The data has highlighted the importance of the supporting MSMEs within the tourism industry, in the form of the trade and service sectors (including hotels and restaurants), in the development of Bantul Regency after the earthquake. In this case, MSMEs became part of the manufacturing, trade, hotel and restaurant sectors as well as the service sector, which are the motor of Bantul's economic growth.

Most of the business activities in Bantul are home-based industries. Based on our further observation, almost all the business entities within the handicrafts industry in Bantul are small and home-based enterprises. Although most of them have a workforce of up to 20 people, the recent data has shown that the handicrafts industry in Bantul Regency is an important source of employment in the region, absorbing around 60,000 workers (Bantul Regency, 2008, p. 58). In addition to this, around 65 percent of the total handicraft exports in Yogyakarta Province are supplied by the industries located in Bantul Regency (Bantul Regency, 2008, p. 58). After the earthquake in 2010, Bantul had 18,119 industrial activities, consisting of small and medium enterprises (BPS Bantul Regency, 2011). This number trend then increased, up to 20,423 industrial activities by 2015 (BPS Bantul Regency, 2017).

Through further observation of MSMEs, it can be seen that most of their production activities, management and marketing are conducted in the same place, i.e. at home. In addition, MSMEs are also characterized by reliance on local resources, private or family-based ownership, small operational scale, labour-intensive, non-formal skills, and the ease of penetrating business sectors, as well as a minimum amount of, or no, promotion (see also Sub-section 7.4.3). Although most of the MSMEs are categorized as family-based ownership, some have already had professional management with legal permits and clear business structures. However, it is undeniable that many of them are still managed in a conventional style that often mixes up the family or domestic needs into the formal business balance sheet.

Based on various reports (International Organization for Migration, 2011; Tim Teknis Nasional, 2007; Sekretariat JRF, 2011), the characteristics of MSMEs allegedly lead to vulnerability to business shocks, such as those which occurred in the aftermath of the Yogyakarta earthquake in 2006. That earthquake proved to create problems for MSMEs and their business continuity. Moreover, the damage to houses caused by the earthquake became a barrier for the household-based MSMEs to recover economically and continue business. Following the earthquake, some of the local residents, who were also working in MSMEs, eventually lost their income, which resulted in an increase in the number of unemployment. This is mainly due to disruption of the production process to serve demand. Summarized from the overall findings, the disruption of the production process caused by the impact of the earthquake can be described as follows.

First, the destructive impact of the earthquake on buildings (i.e. the household building as a place of production and selling point) and other means of production facilities

caused disruption of the production process, which ultimately reduced the ability to meet demand. Unmet demand certainly reduces revenue and reduces the ability of MSMEs to survive and/or to expand their business.

Second, the deadly impact of the earthquake on human resources disrupted the bulk production process. Those who were workers (either skilled or unskilled laborers) and/or business actors at the same time became victims of the earthquake. Many of them were taken to intensive care, ultimately experiencing disability or even death. Due to the labor-intensive nature of MSMEs, emergency conditions after the earthquake caused operations and production to be halted instantaneously, temporarily or permanently. This also resulted in the reduced ability of the company to meet the demand for bulk production orders.

Third, the destructive impact of the earthquake on transportation conditions and basic infrastructure became a barrier for distribution processes and marketing purposes. The disruption of transportation due to infrastructure damages resulted in obstruction of the flow of goods, in both getting raw materials from suppliers and distributing products to consumers. The scarcity of raw materials caused the price to become more expensive, resulting in higher production costs. These increases in cost caused higher vulnerability for MSMEs trying to maintain their business. The damage to the transportation facilities would also become a barrier to redeveloping the local economy of the impacted regions.

Fourth, the non-physical problems such as the decline in the reputation of the impacted region, the remaining psychosocial problems following the traumatic event, together with the infrastructure damage, had simultaneously affected the demand, especially because most MSMEs were influenced greatly by the tourism sectors. The severity of the MSMEs' vulnerability and the impact on the local economy would also be influenced by the availability of the business development plan (BDP) and business continuity plan (BCP).

In summary, the problems experienced by the MSMEs in Bantul Regency caused disruption to the production process in the following ways: (1) damage of production facilities and infrastructure; (2) reduce availability of manpower; (3) damage of transportation and basic infrastructure; and (4) non-physical damage. The four aforementioned problems caused unfulfilled demand and diminishing incomes, which are at the root of difficulties in fulfilling financial obligations to other parties. Hence the

earthquake would have a great impact on the financial capacity of MSMEs, especially for those who had difficulty accessing capital from legal financial institutions.

7.4 Post-Disaster Recovery Governance for MSMEs and the Local Economy of Bantul Regency

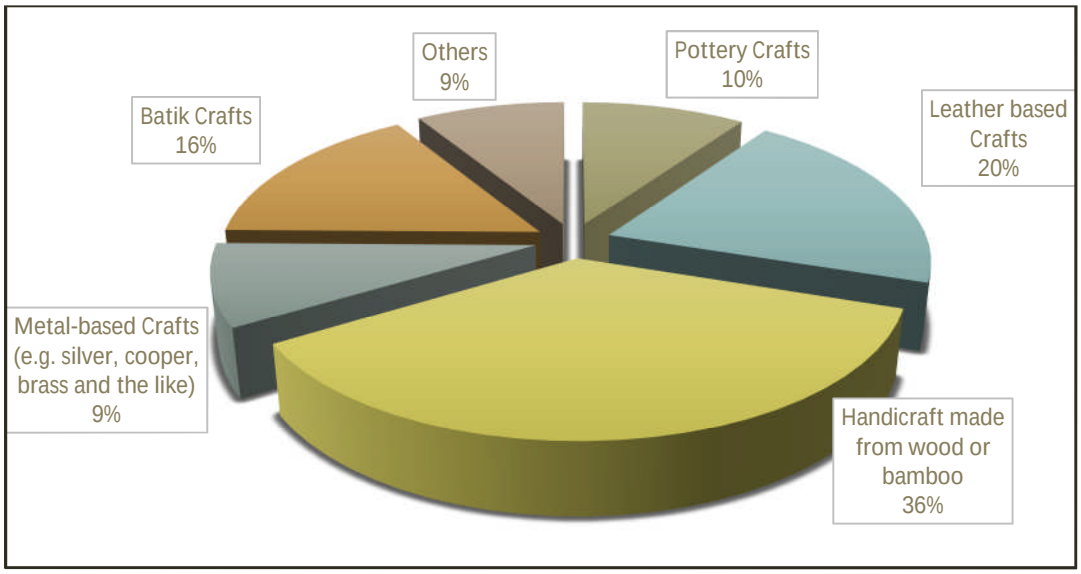
This chapter is partly based on the data collected from questionnaires, and partly other from interviews and analysis of official reports. From 125 questionnaires collected, we validated about 100 with the number fairly distributed within the sampling sub-district areas. Forty-nine percent of all the respondents were male, and 51 percent female. Most respondents (75 percent) were over 40 years old and the rest below that age (25 percent). Furthermore, the oldest respondent was 73 years old, and the youngest was 18 years old.

The majority of the business entities (65 percent) were established before the 2000s: that is, 51 percent of them were established during the 1980s or 1990s and approximately 14 percent before that era (i.e. from the 1950s up to the 1970s). The business is dominated by micro and small businesses (76 percent), comprising 35 percent for micro-scale businesses and 41 percent for small businesses. Meanwhile, the rest are medium-sized businesses. Many of them have a workforce of up to 20 people (84 percent) with capital of no more than 50 million rupiah (64 percent).

Those who are members of the clusters are generally craftsmen as well as sellers (i.e. doing production and marketing activities; 72 percent). Despite being small-scale business activities, through the distribution channels of exporters, about 47 percent of them are already export-oriented. However, their businesses are varied; most are dependent on their location in relation to the nearest craft clusters. The composition of their core businesses can be seen in Figure 7.1.

The next sub-sections explore networks and the assistance during the recovery period after the Yogyakarta earthquake. The first sub-section describes the government policy platform on aid, projects and its kind. The second is continued by exploring the recovery network in Bantul, and finally, identifying expectations (risk perceptions) and the realities of assistance during the recovery period. Key findings of this section are that the main actors on the international, national and local levels are IOM, *Tim Teknis Nasional*, the Industry, Cooperation and the SMEs Board, respectively. Meanwhile, risk perceptions among MSMEs cover issues of place of business, raw materials, tools and machinery, marketing, and capital injection.

Figure 7.1. The Composition of Respondents Based on Core Business



7.4.1 Government Policy Platform, Mechanism and Issues

From the post-disaster recovery process observed, it can be inferred that the Government of Indonesia (GoI) adopted a community development platform. Community development is a concept of economic development that encapsulates social values and networks within the community (Gilchrist, 2009). Within that platform, GoI efforts to empower communities can be seen from three angles: 1) enabler, means to create an atmosphere or climate that enables the community's potential to be developed; 2) empowering, means to strengthen the potential or power of the community; and 3) affirmative action and protection, means to protect and support the weak and vulnerable ones.

However, community development meant here is not intended for the community to become increasingly dependent on various charity programs, because everything has to be achieved through the self-effort and involvement of society as the main actor. Thus the ultimate goal of community development within the recovery process is to empower the community, enable and build the capacity to advance themselves towards a better life and sustainability. As part of community development, economic empowerment may be initiated by the government, but the greater role should be given to society as the symbol of responsibility, in particular, of the advanced society.

Capital difficulties led to the slow pace of business development and the low income level of MSMEs. Nevertheless, through various lessons, the provision of capital grants to the community has been considered less educate the community. If it is not regulated

by a firm mechanism, even a revolving fund will become stalled in the middle of its process which ultimately distorts the market. So far, the government has agreed that the most appropriate way is to facilitate access to capital through existing financial institutions. Hence after the disaster, one of the core problems experienced by MSMEs and which will be discussed in the following section is the aspect of capital (see Figure 7.3 in Section 4.3).

Mechanisms of economic empowerment, including by credit distribution, can be undertaken in groups. Based on the GoI experience, the empowerment effort through individual approaches has been less successful, due to the fact that accumulation of capital will be difficult to achieve among the poor. Moving together in a group, partnership or joint venture is a rational choice. By joining several activities within groups' mechanisms, business is claimed to be more efficient, in terms including (but not limited to), the distribution of products and ordering of raw materials. Through the group mechanism, it is hoped that they will not only build economies of scale together efficiently and economically, but also build the strength and ability to access existing financial institutions and capital.

7.4.2 Networks for MSMEs' Recovery

Almost all respondents (96 percent) agreed that when the earthquake occurred in 2006, the disaster greatly affected their business continuity. From those who were affected, 56 percent of businesses were closed down temporarily for one to three months, 22 percent for three to six months, and the rest (22 percent) for more than six months. This condition has been addressed through a series of policies, regulations and programme activities from many actors, such as basic living-needs assistance, housing reconstructions (either temporary or permanent), livelihood recovery and local economic development (see Chapter 6).

Highlighting the post-disaster programmes for MSMEs, it was noted that the redevelopment of MSMEs in Indonesia was primarily managed by the Ministry of Cooperation and Small Medium Enterprises (red node 13). In addition to this, the Ministry of Tourism (red node 14) and The Bank of Indonesia (i.e. the central bank of Indonesia; red node 11) also take part in policy development. The local government of Bantul Regency (blue node 21) approaches MSMEs recovery with many programmes and activities as part of their local economic development. They have a vision that the Cooperation and MSMEs will be among the main supporters for the local economy

(Saputra and Rindrasih, 2012). In addition to this, to promote shopping tourism, agencies such as the Cultural and Tourism Board (blue node 43) and the Industry, Cooperation and SMEs Board (blue node 42) at the local level have been working hand-in-hand to provide assistance with the recovery of handicraft shopping tourism clusters in Bantul. The network support for the MSMEs and local economic recovery can be seen in Figure 7.2.

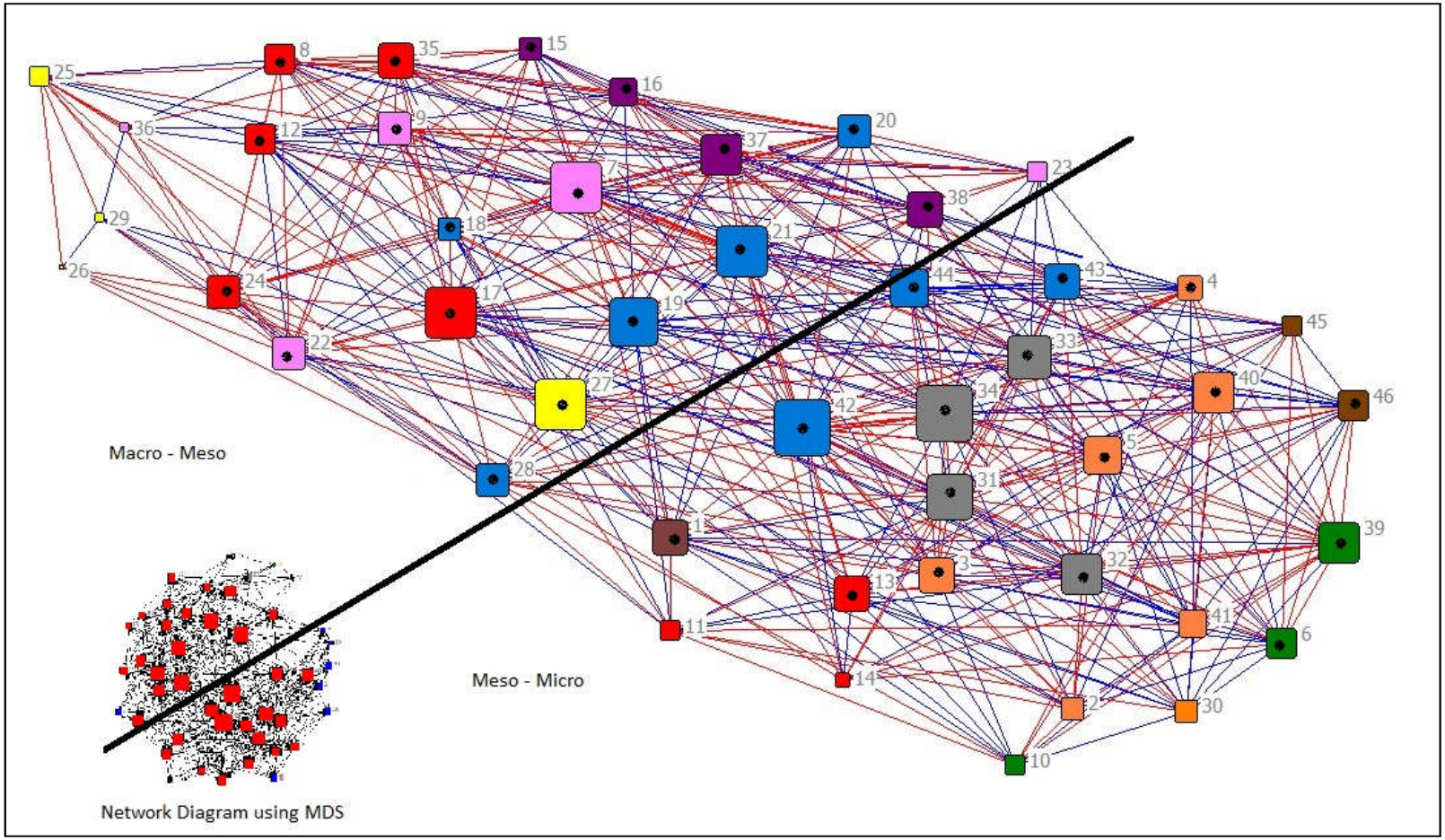
Through the algorithm of the K-core network, it is shown on the graph that most of the actors are connected to one of the large sub-structures (i.e. shown by the nodes with the black dots). This implicitly states the high level of interconnection among the actors. As regards the closeness centrality, the Bantul government (blue node 21) and the Industry, Cooperation and SMEs Board (out, blue node 42) have the highest closeness centrality, both appearing as meso level actors. Meanwhile, based on degree centrality, the main actor on the international level is an NGO, i.e. IOM (yellow node 27). IOM as an international NGO becomes one of the main actors, due to its role in bridging the interests of the donor community and the GoI, and in accordance with its practical experiences of working closely with grassroots level actors. Subsequently, on the national level is *Tim Teknis Nasional* (red node 17), and at the local level is the Industry, Cooperation and SMEs Board (blue node 42). The most critical player in the network, based on calculations of betweeness centrality, is the Industry, Cooperation and SMEs Board (blue node 42), which acts as connector of many small sub-networks, including linking directly to the beneficiaries (grey nodes 31, 32, 33, 34).

In addition, using multi-dimensional scaling (i.e. iterative MDS) methods, the whole network can be regrouped into two large groups, implicitly named as macro-meso level actors and meso-micro level actors. At the macro–meso level, the assistance of international agencies was recognized: the European Union (yellow node 26), Asian Development Bank (ADB, yellow node 29) and World Bank (yellow node 25), according to the mechanism, as follows: BAPPENAS (red node 24), local governments (blue nodes 18 and 20) and donors (consisting of the European Union, the Netherlands, the United Kingdom, ADB, Canada, Finland, and Denmark) created a multi-donor fund, namely the Java Reconstruction Fund (JRF; pink node 22), with the GoI (represented by BAPPENAS, red node 24), European Union and World Bank forming the joint steering committee. The project started in 2006 and officially closed in the year 2012; that is, after the project period was extended due to the Mount Merapi Eruption in 2010. The project was meant to back up the government programmes (i.e. *Tim Teknis Nasional*, red node 17); therefore, many of the activities were in line with the government's

efforts. However, some of them were also a refinement based on the lessons taken from previous disaster governance (e.g. MDFF Aceh-Nias, pink node 36).

Furthermore, at the meso-micro level, the recovery activities were partnered with many stakeholders: among others, local government boards (shown by blue nodes 42, 43 and 44), *Bank Indonesia* (BI, i.e. central bank of Indonesia, red node 11), microfinance institutions (orange nodes 2, 3, 4, and 5), and *PT Permodalan Nasional Madani* (PNM, brown node 1), as well as the private sectors within the platform of business investors and partners (brown nodes 45 and 46). Broadly speaking, the two large groups mentioned above represent the characteristics of most of the actors: the macro-meso level is dominated by the bureaucratic nuances of the public sector, including international agencies, while the meso-micro level is dominated by economic networking activities, including the private sector.

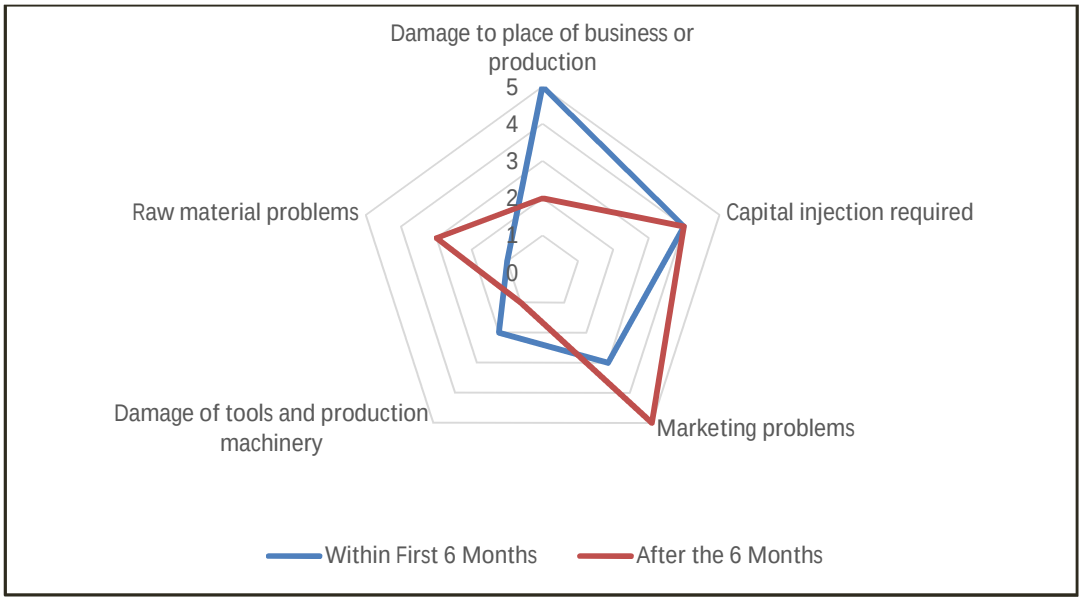
Figure 7.2. The MSMEs and Recovery Network Post the Yogyakarta Earthquake



7.4.3 The Assistances: Between Expectations and Realities

Based on their characteristics, each MSME will face different difficulties from one another. According to questionnaires from a hundred valid respondents, we have classified the five most widely perceived problems during recovery periods, as can be seen in Figure 7.3 below.

Figure 7.3. The Most Widely Perceived Business Difficulties after the Earthquake



The top five problems that led to difficulties for MSMEs within the period of the first six months were damage to place of business or production, the need for capital injection, marketing problems, and damage of tools and production machinery, as well as availability of raw materials. Meanwhile, after the first six months, the problems shifted to marketing problems, the need for capital injection, the availability of raw materials, damage to place of business or production, and damage of tools and production machinery. Furthermore, referring to these aforementioned facts, problem findings based on Section 7.3.2, and the recovery network described above, the following explanation elaborates the assistance further according to seven themes.

7.4.3.1 Business Assets

The main asset includes land and buildings for production purposes. Based on observations, land and business premises in Bantul and Yogyakarta districts often get mixed with the business owners' houses; at the same time, the locations are also mingled in the residential area. Since many of the MSMEs in Bantul and Yogyakarta are

home-based industries, damage to their houses will definitely impact on their continuity as small businesses, since housing damage also means damage to the place of business itself (INT11, as documented in The Industry MSMEs and Cooperation Board, 2015), *'the economic downturn was a real impact of the disaster because of the loss of business opportunities. On the other hand, with a ruined house, there was no longer a place to live, and even to start a business*,' said the local government respondent. Furthermore, it was predicted that these MSMEs would not have the funds to replace the assets in a short period of time; therefore, loss or damage to productive assets might have an impact on MSMEs' long-term revenue.

According to the questionnaire respondents, the damage to their houses was the first problem and presented the highest level of difficulty in the recovery process of their businesses (as shown by the rating of 5). In this case, the Government of Indonesia (GoI) anticipated the issue in a timely manner and with the right policy focus. Working collaboratively with the local government, international agencies and NGOs, the GoI placed housing rehabilitation and reconstruction as the first priority after the emergency period was over. Housing development assistance was strongly felt by beneficiaries, especially MSMEs. According to the group leader respondent, such assistance helped business actors to concentrate more on improving their business (INT13, as documented in Community Groups & Associations, 2015). The speed of housing reconstruction was also recognized as a result of joint working between many parties, including the community group itself.

After six months, the housing problem had been largely resolved in most areas of Bantul. This was shown by a substantial decrease in housing demands of around 80 percent, according to the first statements of the respondents. Six months after the earthquakes, the respondents placed housing reconstruction as their fourth-highest priority (as shown by the rating of 2).

7.4.3.2 Production facilities

Production facilities are related to the tools and machinery used for production processes, which in the aftermath of the disaster were partially damaged by the ruins of the roofs and buildings. In a crisis situation followed by declining revenue, MSMEs acknowledged that the replacement or addition of production equipment had been a difficult decision. This is because the prices of some of the tools they needed were expensive (even before the earthquake), and this was aggravated by the increasingly

expensive price of raw materials after the earthquake. The machine repair option for some businesses was also dilemmatic because some of the spare parts were difficult to obtain and/or expensive.

In this regard, experts expected the government to pay more attention to their aspirations, by channelling aid in the form of tools and production machinery, for example, and training for the tools' repair/maintenance so that MSMEs could re-start production immediately. However, in contrast to the need for home asset provision as a place of production, according to the respondents, the need for tool provision or repair training assistance only occupies the fourth position (as shown by the rating of 2) within the first six months after the disaster. This position declined to the last priority after the first six months, as shown by the rating of 1. It is argued that the MSMEs preferred the additional cash transfer instead of tool or machinery replacement.

Nevertheless, the government still ran the program and relieved the burden of the MSMEs through machinery replacement programs, as in Manding in Bantul, a leather-based handicraft cluster. In this case, the government contributed to each entrepreneur machines and compressors to the value of US$ 900 (Saputra and Rindrasih 2012, p. 60). According to the local government respondent, GoI much preferred to provide appropriate assistance than mere cash aid (INT11, as documented in The Industry MSMEs and Cooperation Board, 2015):

> *So, indeed, to grow the initial capital in order to be able to start a business again, (the government) … uhmm did not provide cash assistance, but in the form of machinery and equipment for production process. Much of this kind of assistance came from the central government.*

In addition to this, through IOM-JRF, asset replacement assistance and granting access to alternative financing were conducted. Approximately 4,300 MSMEs had been assisted in the form of damaged tool and machinery replacement and restoration of destroyed facilities.

7.4.3.3 Workforce

The most significant impact of the earthquake was the loss of life and the injured people. According to the official GoI data, the total death toll in Bantul reached 5,760 people (BAPPENAS, 2010). In the context of MSMEs, the availability of manpower is crucial due to MSMEs' characteristic labor-intensive operations. Recruitment and training could not be undertaken immediately because at that time the situation and

conditions had not yet stabilized in many places around Bantul and Yogyakarta. This certainly resulted in disruption of the capability of MSMEs to fulfill the demand.

The recruitment of workers from areas outside Yogyakarta also had insignificant impact. For the first few months, the conditions were not conducive due to a series of minor but frequent earthquakes that occurred. In addition, MSMEs in some business fields desperately needed specific expertise related to the local characteristics of handicraft clusters (e.g. batik). As a result, the production process was disrupted by the lack of skilled labor or the new prospective employees who still needed further skill training. Most MSME's business owners expected that there would be a time adjustment for regular bulk ordering during this period in order to avoid losing customer trust in the long run due to their inability to meet the targets.

GoI programmes and projects had anticipated this by providing a great deal of assistance, which took the form of training (e.g. design, product, business management and book-keeping), such as the projects arranged by the International Organization for Migration (IOM) and the Deutsche Gesellschaft fur Internationale Zusammenarbeit GmbH (GIZ), funded by the Java Reconstruction Fund (JRF). Besides training, the livelihood recovery project by JRF covered access to microfinance, replacement of production tools, renovation of showrooms or workshops, access to markets, and capacity building (International Organization for Migration, 2011). At the practical level, local government insisted that training and coaching for the MSMEs should be delivered in groups, as the respondent below explained (INT11, as documented in The Industry MSMEs and Cooperation Board, 2015):

> *Before they form a legal entity or co-operative, we do direct the craftsmen to initially form a group, at least in the form of a 'paguyuban' (i.e. groups or associations). In addition to helping facilitate us to communicate through the heads of 'paguyuban', the group's existence is also expected to facilitate them internally to help each other and exchange their experiences.*

These by-designed-networks are expected to give advantages for themselves, especially in the case of future crises due to disasters.

In addition to the problem of business resumption is the issue of unemployment. According to the interviews of five districts in Bantul, shopping tourism has become the livelihood of many people living in the handicraft cluster area. Besides selling unique and genuine souvenirs, the clusters often open the handicraft making workshops, like workshop of batik-making in Wukirsari Village and pottery-making in Kasongan

Village. Some additional tourist attractions, such as cultural events and traditional performances, were found to be a part-time occupation whenever there is demand from a tourism agency or visit from a larger tourist group.

However, workers cannot stay in a region if they cannot earn their living from it. In order to ensure the workforce remains a valuable asset to the community or region after a disaster, local government should work together with the private sector to assess business climate, track job losses, assist displaced workers, and understand the availability of skilled workers to meet specific employment needs after a disaster. Changes in demographic after the disaster as well as the emergence of disaster-related work could result in mismatches between available skills and available jobs (Schwab, 2014).

7.4.3.4 Transportation and basic infrastructure

From the perspective of local economic redevelopment, the infrastructure improvement project is truly crucial. The infrastructure includes highways, electricity, water and telecommunications. Accelerating productivity and business growth through capital access policy will have no significance if the product cannot be sold at the most appropriate price. After the earthquake, some roads were damaged and cracked; therefore, an important component in improving MSMEs' business after the earthquake was to improve the transportation and basic infrastructure in order to reduce production costs. Even if they were not damaged, transportation was hampered by fallen trees or building debris. Just after the earthquake, many victims preferred to sleep in front of their gardens, residential roads and public fields or parks because of their fear of the impact of aftershocks (Shakuntala, 2007, pp. 21-22).

The earthquake impact caused the products of MSMEs could not be marketed properly, or could only be marketed with low profit margins due to high transportation costs. Post-earthquake, the MSME owners expected the government to immediately complete the reconstruction of the basic infrastructure as it was related to transportation of raw materials and product distribution. In some cases the craftsmen's villages were not heavily damaged, but the shop cluster areas and surrounding infrastructure were devastated. The silver crafters experienced this, which resulted in difficulties selling their products at Kotagede. However, the marketing problems raised were not only the result of the damage to infrastructure cutting the distribution lines to other areas, but also of losing so many nearby customers due to the significant death toll.

In addition to this, as elaborated in the interviews and questionnaires, the MSMEs identified global potential threats to their business continuity. They argued that power outage was the most frequent and persistent disruptive problem for their operational and production processes. Also related to MSMEs' recovery, beside power outage, is the water supply, which influences the production process. This improvement was considered strategic for them in order to support the increasing revenue of MSMEs. This situation was set as the GoI priority, and state-owned enterprises were instructed to restore their services within the impacted area, such as communications by Telkom, electricity by PLN, etc.

7.4.3.5 Raw materials

After the earthquake, some handicraft clusters experienced scarcity of raw materials, which impacted on increasing production costs. Raw material contributes the largest component of production cost and has been an issue for most MSMEs up to now. According to respondents, the issue of raw materials for production was perceived as of higher importance after the first six-month period, increasing from a rating of 1 to a rating of 3. This is mainly because within the first six months, the survivors were still in the adapting period, so their attention was mostly focused on fulfilling basic needs.

Despite still struggling with the living costs after the emergency period, the MSMEs should have dealt with the main obstacle that was the lack of capital cash to cover production costs. Some others did not face the constraints of the availability of extra funds but still experienced difficulties due to the delay of raw material supplies. This was related to the condition of the infrastructure for distributing the raw materials to the place of production. MSMEs had already attempted to replace raw materials with similar materials (i.e. substitution) and re-arranged the schedule of ordering raw materials (to order them earlier) or increased their inventory of the materials.

As reported by the respondents, many business actors tried to restore their business by accepting a large number of orders. However, due to unstable cash flow conditions, they were unable to fulfill the demand. According to them, MSMEs only needed a short-term loan as a bailout during the production period, that is until the buyer paid for the entire order (e.g. usually not more than 6 months). However, from the bank side, such loans are considered unprofitable, because the profitable loan should have a minimum of 3 years tenure. It was further explained that cooperatives have not been able to handle these problems, due to the maximum loan ceiling that local cooperatives could

give only, i.e. 25 million rupiah. Therefore MSMEs hoped that the government could control and maintain the stability of the raw material supply and fuel prices as the main components of production costs. In addition to this, MSMEs also wished that there were credit facilities for paying the expensive raw material prices in order to ensure the continuity of the production process.

7.4.3.6 Innovation and Marketing Strategy

The MSME's expectation of the government and similar agencies regarding this issue was marketing through promotion. With the diminishing demand post-crisis, MSMEs also expected the government to assist them in the form of constant orders from government and private partners, especially during the early period of their efforts to re-operate. Such income was used to strengthen cash flow and to continue to perform financial obligations to other parties. In addition, the bulk ordering mechanism from customers who paid in advance or that preceded with a significant amount of down payment would surely help the MSMEs.

The successful story of the stimulant policy of housing reconstruction was not followed by a smooth shift to another stimulant policy specifically for business recovery. In the second six-month period of recovery, the government failed to anticipate the MSMEs' greatest difficulty: marketing problems. The marketing problems had actually been moderate in the first six months; however, while the people still had their basic needs met by assistance from the government and or other parties, they did not demand too much for a solution. After the emergency period was over, the aid became far less frequent, and at the same time, the crafts orders had substantially decreased since the earthquake (Sekretariat JRF, 2011, p. 38). At that time, MSMEs realized that they had to speed up the business recovery in order to earn money at their normal living levels.

Actually, micro and small business entrepreneurs in general have the skills and courage to run the business but have difficulty in marketing the product. They still need the transfer of knowledge, management and technology to increase capacity. Therefore another role of government, through the JRF Project, was to facilitate technical and product innovation training, sales and marketing, and entrepreneurship. During the two years of the project, this technical assistance reached thousands of MSMEs and medium enterprises (Sekretariat JRF, 2011).

One of the local government's efforts to restore livelihoods was through increasing demand for batik by government officials obliging their staff to use batik for their

working uniforms. In addition to this, the local government also facilitated the craftsmen's participation in provincial, national and international promotional events and/or exhibitions (Raharjo, 2015a; INT11, as documented in The Industry MSMEs and Cooperation Board, 2015); '*in general, the Bantul government has cooperated with the foreign ministry ... as a way of promoting, their offices display Bantul products, in particular the embassies in the territory of America, Europe, Asia and Africa*'. Furthermore, through KADIN -a formal and legal business association in Bantul Regency-, a cooperation has been established, especially with Qatar, Turkey and Suriname (INT13, as documented in Community Groups & Associations, 2015).

The Bantul government claimed that small-scale manufacturing and handicraft products in Bantul Regency have been exported, among others, to the US, Germany, Spain, the Netherlands, South Africa and Australia (Bantul Regency, 2008; Raharjo, 2015a). However, this marketing development has not been encouraging owing to the lack of initial capital and the difficulties facing small and medium-sized craftsmen when conducting export trading negotiations and transactions with potential buyers. Another problem regarding exporting was the low capacity of crafts industries, especially due to the characteristics of the hand-made products: more detail with a longer process production (INT11, as documented in The Industry MSMEs and Cooperation Board, 2015). Hitherto, the export process has been conducted only by large companies or professional exporters; some of them were even exported through the distribution lines of Semarang, Jakarta, Surabaya and Bali tourism (Bantul Regency, 2008, p. 55-56; Bantul Regency, 2009b). In addition to having a large production capacity, the exporters have also been supported by the broad craftsmen's networks in order to fill the gap between production capacity and bulk order (INT14, as documented in The Industry MSMEs and Cooperation Board, 2015).

MSMEs that relied heavily on the shopping tourism clusters (i.e. direct/offline marketing) suffered the hardest impact from possible prejudicial post-disaster news which resulted in a decreasing number of tourist visits to Yogyakarta. However, the impact of media coverage was different across clusters, especially to the Kasongan cluster. A local officer of Kasongan Village observes that media, in addition to broadcast of the disaster news, had accidentally become an effective means of promotion. According to the respondent, the disaster exposure to the public had surprisingly impacted on the increase of *omzet* by more than 300 percent. Many buyers ordered online and others came directly to the shops, resulting in the revival of the pottery business within period of 6 to 7 months (INT14, as documented in The Industry MSMEs

and Cooperation Board, 2015). Therefore, IT-based marketing was another attempt to effectively boost the MSMEs' sales. The local government argued that online selling would be more suitable for the condition of MSMEs, as they would not experience the lack of capital as like when they have to meet the export demand. Through online selling, they could also sell at more appropriate and relatively higher prices than they could sell to the collectors and/or exporter (INT11, as documented in The Industry MSMEs and Cooperation Board, 2015).

However, the fundamental problem of using information technology for MSMEs was the provision of equipment and availability of operators. According to them, the use of technology surely increased the operational costs, especially the cost of purchasing equipment and paying for internet access. Moreover, the lack of employees who were able to operate and fix equipment faults was also the basic reason for the reluctance to use technology. On the other hand, there is still an inherent stigma about the insecurity and distrust of potential buyers when using the online system. Face-to-face trading is still assumed to be more secure by prospective buyers, so that many MSMEs decided it is not necessary to use technology for now.

7.4.3.7 Financial Access and Capital Injection

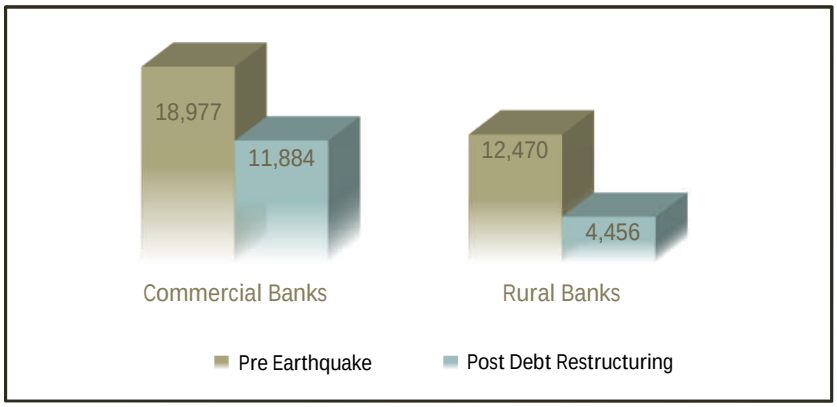
Theoretically, all the impacts mentioned above would simultaneously affect the ability to fulfill demand. Unfulfilled demand and diminishing revenues are at the root of difficulties in fulfilling financial obligations to other parties. Hence, the earthquake would have a great impact on the financial capacity of MSMEs, and especially for those who had difficulty accessing capital from formal financial institutions. The constraint on the MSMEs preventing them from gaining financial access was especially relevant when the house assets and business premises were damaged due to the earthquake. As is widely known, the credit procedure of any formal financial institutions requires collateral; unfortunately, most of the important documents – including land ownership certificates – were missing under the debris. Furthermore, most homes were damaged and destroyed with land boundaries that were difficult to clarify accurately and quickly.

With this post-crisis situation, the MSMEs expected that government would provide easier financial access. The availability of a mortgage facility for small-scale soft loans with quick processing would also be very helpful for them. In addition, the restructuring of previous debt was needed and expected to overcome various limitations and barriers in production and promotional activities. Besides restructuring

loans, affirmative banking policies were also expected, with the policies emphasizing on easy requirements, affordable interest rates and adequate credit ceilings. The MSMEs admitted that the interest rate was above their average capability at that time. During the crisis, MSMEs expected that the government would subsidize interest, so that they could continue their existing financial obligations, as well as exploring any other funding alternatives.

The local government cannot do much about the above mentioned problems (INT11, as documented in The Industry MSMEs and Cooperation Board, 2015). Besides, banks have their own settled system, according to regulations, the role of monetary and financial institutions supervision was still handled by Bank Indonesia (BI, i.e. the central bank of Indonesia) at that time. BI thus remains a critical actor in supporting the economic recovery by stipulating special treatment for credit practices in the disaster-affected areas. For the policy of treating banking credit in the disaster area, BI referred to Bank Indonesia Regulation (PBI) No. 8/15/PBI/2006 dated 5 October 2006, concerning the special treatment of bank credit for particular regions in Indonesia affected by disasters. BI followed this up by conducting debt restructuring for Yogyakarta and Central Java earthquake survivors, as can be seen in Figure 7.4.

Figure 7.4. Debt Restructuring after the Earthquake



Source: BI Jogjakarta (2007)

According to the respondents, financial access was consistently the second highest priority, both within the first six-month and after it. In relation to this, the GoI and JRF agreed to increase financial access and provide revolving funds for the MSMEs. The project was partnered with local government, the microfinance institutions, and *PT Permodalan Nasional Madani* (PNM). Technical support was also provided to engage as many as possible of the financial institutions to ensure the coverage and sustainability

of the programme. The provision of financing access was implemented through the IOM-JRF project, and around 10,000 MSMEs accessed financing from 1,200 MSMEs that were previously targeted. Loans were disbursed through 26 microfinance institutions (MFIs) and were designated as revolving loan funds that provided financing access for MSMEs to re-establish their businesses (Sekretariat JRF, 2011).

Furthermore, institutional arrangements were required in order to implement a revolving loan fund mechanism; thereby, the assistance could be carried out in accordance with the spirit to be independent. Moreover, the main objective of the institutional arrangement was to reach the widest possible marginal beneficiary groups, including the informal sectors or non-bankable groups, to obtain loans. Meanwhile, PNM, a state-owned financial institution, served as the top institution that managed post-disaster revolving credit funds provided by JRF donor communities, channeled through rural banks, MFIs and cooperatives. Through this arrangement, the revolving loan was expected to provide the benefit of accessing revolving loan funds to the target group for at least 10 years after the project ended.

7.5 Local Economic Recovery in Bantul Regency: Lessons and Strategies

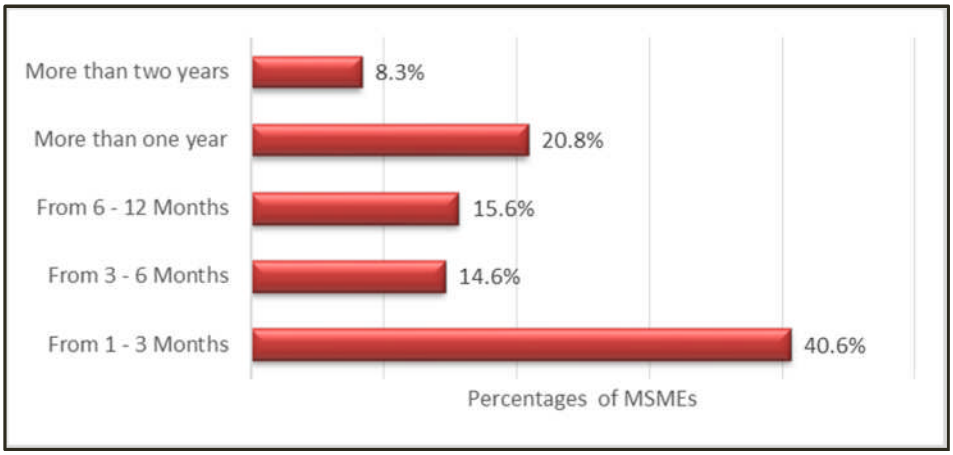
Reflected by the achievements in housing rehabilitation and reconstruction, which significantly fulfilled housing needs within the first 18 months (Tim Teknis Nasional, 2007), the reports from other agencies (Sekretariat JRF, 2011; International Organization for Migration, 2011) also revealed a similar result, in particular in terms of MSMEs' recovery. At the end of the JRF project assistance, through the results of internal evaluations from the polls, it was found that 87 percent of MSME beneficiaries of the project were back to operating capacity, sales and profits at their pre-disaster levels.

This is also in line with the results from the 100 questionnaire respondents in this thesis. According to these respondents, the indication of the MSMEs' recovery was felt much earlier than the GoI predicted: that is, approximately 55 percent of the 96 respondents claiming to be affected by disaster could re-start a business normally and had begun to earn a profit within the first six-month period; 16 percent started between the six-month and one-year periods, and the rest (29 percent) started after a one-year period (as shown in Figure 7.5 below). Similar findings were also obtained from interviews with respondents from business associations; that is, it took around 4 months to 12 months for MSMEs to re start and operate (INT13, as documented in

Community Groups & Associations, 2015). Furthermore, it was explained that the simple indicator of MSMEs recovery is if there are demands on one side, which followed by the ability to start serving demands, on the other side. However, the most important thing is the spirit and determination to rise, in which the MSME's actors must be sure that their business will re-exist.

In this section, the discussion covers the aspect of lessons and strategies for local economic recovery in Bantul. The first sub-section explores the lessons, and the second consists of strategies to revive the local economy. Key findings of this section are the five lessons and two key strategies as follows.

Figure 7.5. The Recovery Period of MSMEs Post the Yogyakarta Earthquake



7.5.1 Lessons from the Bantul Regency Cases

This section aims to draw lessons from the underlying processes beneath the network, in reference to the facts revealed from or implicitly stated in the seven themes previously discussed (in Section 4.3), as follows:

7.5.1.1 Stimulant and affirmative policy

In addition to the stimulant policy, like the housing reconstruction broadly explained in Chapter 6 and in Section 4.3, it would also be worthwhile to apply an affirmative policy to women in disaster-affected areas. In Bantul, most of the batik crafts are produced by women, and more than half of the respondents in this thesis are also women (51 percent). Women's resilience in reviving from post-disaster crises was influenced by motherhood characters, societal environment and social capital (Yusuf, 2014). According to Yusuf (2014, p. 242-243), which based on FGDs with women's batik groups in Bantul, It is said that after the 2006 earthquake, the women income from

these batik craft contributed about 70 percent to the family income. Their toughness is especially driven by their motherhood characters, keeping struggling to the lives sufficiency and to feed their children.

The other example was within the framework of the JRF project which involved groups of women training in food processing in order to produce a variety of snacks and crackers from banana, cassava and peanuts. They have successfully created new brands for their products. Thus, in addition to food-processing skills, the women were also taught to create a brand, market it and find partners for marketing purposes (Sekretariat JRF, 2011).

To sum up, women as craft workers in the tourism industry in Bantul have played a critical role. They succeeded in generating their economies or establishing new businesses, both in the independent and collective business schemes, as the result of the use of their social capital (Yusuf, 2014). It is interesting to observe that women, who have been widely assumed to be the most vulnerable actors in the face of disaster, proved to be the tough actors in dealing with economic challenges within the critical recovery phase.

7.5.1.2 Aid disbursement and information

Most respondents said that they obtained assistance from the government. Besides government support, they claimed that local and international NGOs, international agencies, and private companies (through corporate social responsibility/CSR), as well as financial institutions, also played important roles in supporting them in restarting their businesses. Interestingly, a number of respondents admitted that they also received assistance from the Indonesian Furniture Industry and Handicraft Association (i.e. ASMINDO), and furthermore from personal donations or charity. The donations could be from their kinship relations and extended families or even from unknown generous people. From the aforementioned facts, it can be inferred that social networks and connections do play an important role within the MSME recovery process.

In the beginning of the recovery phase, the disclosure of aid information about assistance from the GoI and other agencies was an important for the people. Later on, it became a crucial factor in eliminating the sense of unfairness between survivors as well as achieving the equalization of aid disbursement. Within the first three months, the situation was almost chaotic due to information being unmanageable (Widyanta, 2007). Some people suspected there were unfair practices in the aid disbursement process.

The government had anticipated this by formulating a group mechanism, in which they decided themselves who should be given the highest priority for assistance. It is claimed that social control occurred during this process within the groups, lowering the likelihood of potential conflicts.

The other interesting finding is that the aid also created another problem. As an illustration (Saputra and Rindrasih, 2012), some of the skilful senior craft workers, supported by aid from government and non-government organizations, tended to build their own businesses, leaving the old ones temporarily disrupted due to shortage of labour. Thus, after the earthquake, entrepreneurs faced difficulties in hiring staff and skilful craftsmen since the new craftsmen had not received formal training, as most craftsmen learned their skills from senior workers or parents, without any formal training (Sekretariat JRF, 2011, p. 38). Therefore the candidate workers had to rely on the senior craft workers for training and guidance. For the owner, the time taken for the process of training, is an investment, yet time-consuming.

7.5.1.3 Community engagement

Following the process, community engagement, based on the local wisdom of '*gotong royong, saiyeg saeka kapti*' (Tim Teknis Nasional, 2007), which was adopted as the value of partnership for sustainability (Sekretariat JRF, 2011, p. 19), has been claimed to be an essential element of successful recovery.

Although the losses at the Kasongan pottery handicraft centre were estimated to reach around 22 billion rupiah, the craftsmen worked hard to recover, and as a result, it was recorded that UMKM activities were relatively normal again by mid-2007 (Tim Teknis Nasional, 2007, p. 168-9). Furthermore, from the interviews, the spirit of togetherness was also found within the tourism of the handicraft cluster, the local MSMEs and the community, which also strove to work together. Some of them acted as entrepreneurs in shopping tourism (i.e. the shop's owners) and souvenir suppliers (i.e. the craftsmen), while others acted as the owners of home-stay and transportation businesses (i.e. car rental).

These dynamic interactions between shopping tourism destinations and other kinds of tourism attractions strengthened both. As a result, the local people began to believe that shopping tourism would provide them not only with sufficient income but also enable them to take on a profession, i.e. as an entrepreneur. In the long run, the craftsmen or labourers themselves had been evolving and became the new

entrepreneurs. Thus it is claimed that tourism encouraged many new business players around the Bantul area.

7.5.1.4 Private partnership

In the context of MSMEs relating to large industries, business recovery is usually in the forms of raw material assistance and production training: for example, what the flour industry did to assist their foster children, i.e. home-based culinary and bakery industries. Various training courses on baking and food processing were conducted for them within the framework of the links between large industries and small industries (Tim Teknis Nasional, 2007). The partnership with the private sector in the provision of raw materials was also performed within the batik industry, such as through the partnership of providing the fabric materials (e.g. in cooperation with PT. Primissima) required for the batik process (INT11, as documented in The Industry MSMEs and Cooperation Board, 2015).

In addition, the partnership cooperation was carried out in the form of a product packaging scheme. Generally, most MSMEs are able to produce good products, even high quality product, but products become less competitive due to poor packaging (INT11, as documented in The Industry MSMEs and Cooperation Board, 2015). For this purpose, the mediation process between large, medium, and small business was also initiated by associations of entrepreneurs and business, especially to match the minimum orders and price levels in accordance with the capacity of small business (INT13, as documented in The Industry MSMEs and Cooperation Board, 2015).

According to Unilever Indonesia Foundation, Corporate Social Responsibility (CSR) is no longer merely for giving away corporate money, but rather there is an element of ownership within CSR activities. That is, empowerment should be a two-way process between the company and the beneficiary: ‘The boundaries between the ‘given’ and ‘giver’ becomes disappeared gradually, thereby they can grow and be mutually reinforcing’ (Tim Tempo Institute, 2011, p. 17). A CSR program will have a significant impact on society, when it is designed, managed and controlled as well as supervised by professionals, and aimed to be sustainable from the beginning. The key is to make the community as the owner of the program. When the community is actively involved, then its successful strategy might be replicated elsewhere and for other programs.

Box 7.2. Unilever Indonesia Partnership Programme

The Unilever Indonesia Foundation partnership programme with Indonesian farmers started in 2002 in Bantul, Yogyakarta. At that time, 25 black soybean farmers were invited to become the raw material supplier for *Kecap Bango*. By 2010, the number of black soybean farmers who had joined reached 6,600 farmers (Tim Tempo Institute, 2011, p. 56). The Foundation also partnered with a team of researchers from Gadjah Mada University, Yogyakarta, to ensure the quality of soybean produced by farmers. The interesting thing about this partnership programme is the market guarantee for their crops, 'this programme is like providing hooks as well as access to ponds and markets', said one of the beneficiaries. The soybean farmers had been planting approximately 1,170 hectares of land and produce crops that account for about 30 percent of *Kecap Bango*'s raw materials (Tim Tempo Institute, 2011, p. 60).

Source: Tim Tempo Institute (2011)

On the other hand, for many companies (including Unilever), investment in the form of community empowerment and education is another form of promotion and product branding to the public as potential customers. CSR through a corporate foundation has become 'a catalyst connecting companies and communities' (Tim Tempo Institute, 2011, p. 24). Input from the community becomes easier to collect, and at the same time the message to be conveyed by the company can also be channeled. This type of 'mutualism symbiosis' connection has been clearly stated by the respondent (INT12, as documented in Yayasan Unilever Indonesia, 2016):

> *Every farmer or MSMEs empowerment should have relevance to Unilever's business, otherwise it will be difficult to sustain. Thus, in practice, besides wanting to realize social responsibility, the company also thinks about the guaranteed supply of materials*

7.5.1.5 Local culture and network

Most of the shopping tourism clusters in Bantul are based in one geographical area (i.e. the village-based clusters), and their activities are dominated by the cultural values of cooperation, the social network and trust. From the observation, although those handicraft clusters have the same captive markets – the tourists who visit Bantul and Yogyakarta – still MSMEs perceive that the business competition level remains relatively low.

In order to illustrate this, Saputra and Rindrasih (2012) have provided an evidence-based study regarding the connectedness and cooperation between the villages of Pundong and Kasongan. Most of the Pundong craftsmen produce a typical plain ceramic, but the Kasongan craftsmen produce ceramics with various patterns. In a practical way, many of the Kasongan craftsmen often buy the plain ceramics from

Pundong and put a pattern or colours on them, e.g. woven rattan and banana stem bark patterns. In addition, from further interviews, some products which are meant for export often have the same distribution line, though they do not go to the same target market. In another lesson from the JRF Project, the silver crafters received aid in the form of production facilities, such as tools and machines. They had to form groups in order to accept the assistance from this project. These groups also helped them to connect with other craftsmen, who had previously worked individually (International Organization for Migration, 2011).

In addition to these local cultural values, during the recovery period, the local government ran an aggressive campaign with the motto, 'Stand up on our own feet', or in other words, the aid should assist communities so that they can help themselves (Tim Teknis Nasional, 2007). This message was meant to lighten the spirits of the survivors who became depressed due to the aftermath of the disasters. Denis Nihill, the chief of Mission IOM Indonesia, clearly stated, 'During these visits, I have also been pleased to note an increase of vibrancy and sense of optimism in the communities' (International Organization for Migration, 2011, p. 6). Furthermore, the government suggested people should not only be optimistic but also not over-dependent on any external aid. Some of the respondents admitted that they never received any assistance from any parties. They purely relied on their existing savings and/or their own assets.

7.5.1.6 Business Continuity Plan (BCP)

Just after the earthquake, the MSMEs' predictions for their business continuity were varied. Only about 25 percent of the respondents were optimistic that their business would survive for the next 10 years. Nearly 60 percent thought they would close in less than 10 years, and the rest answered in other ways. This subjective opinion is a common view within a post-crisis picture; interestingly, despite living in a disaster-prone area, more than 77 percent of business actors chose not to move the location of their business, and still wanted to revive and/or expand the business again (90 percent). Unfortunately, the facts revealed that almost all the respondents had no business development plan and resilience strategy, or so-called business continuity plan (BCP).

The Bantul government thought that BCP is not yet necessary for MSMEs. Furthermore, based on the personal opinion of respondents, local government might only pay attention to high risk areas where the BCP may be introduced. The lack of

understanding of the local units on disaster risk reduction has been illustrated by the following opinion: *'local government has been choosing a role to accommodate the needs of MSMEs, rather than providing incriminating regulations to the business community. I see no urgent need (for imposing BCP) for now'* (INT11, as documented in The Industry MSMEs and Cooperation Board, 2015). Implicitly, local government apparatus was not fully aware that BCP is, indeed part of risk reduction efforts and business resilience, and aims to avoid as much possible losses and/or business shocks in the case of future disasters. On the other hand, the business associations have already been aware of the important of BCP; however, they are still at an early stage of classifying the MSMEs based on their risk and vulnerability.

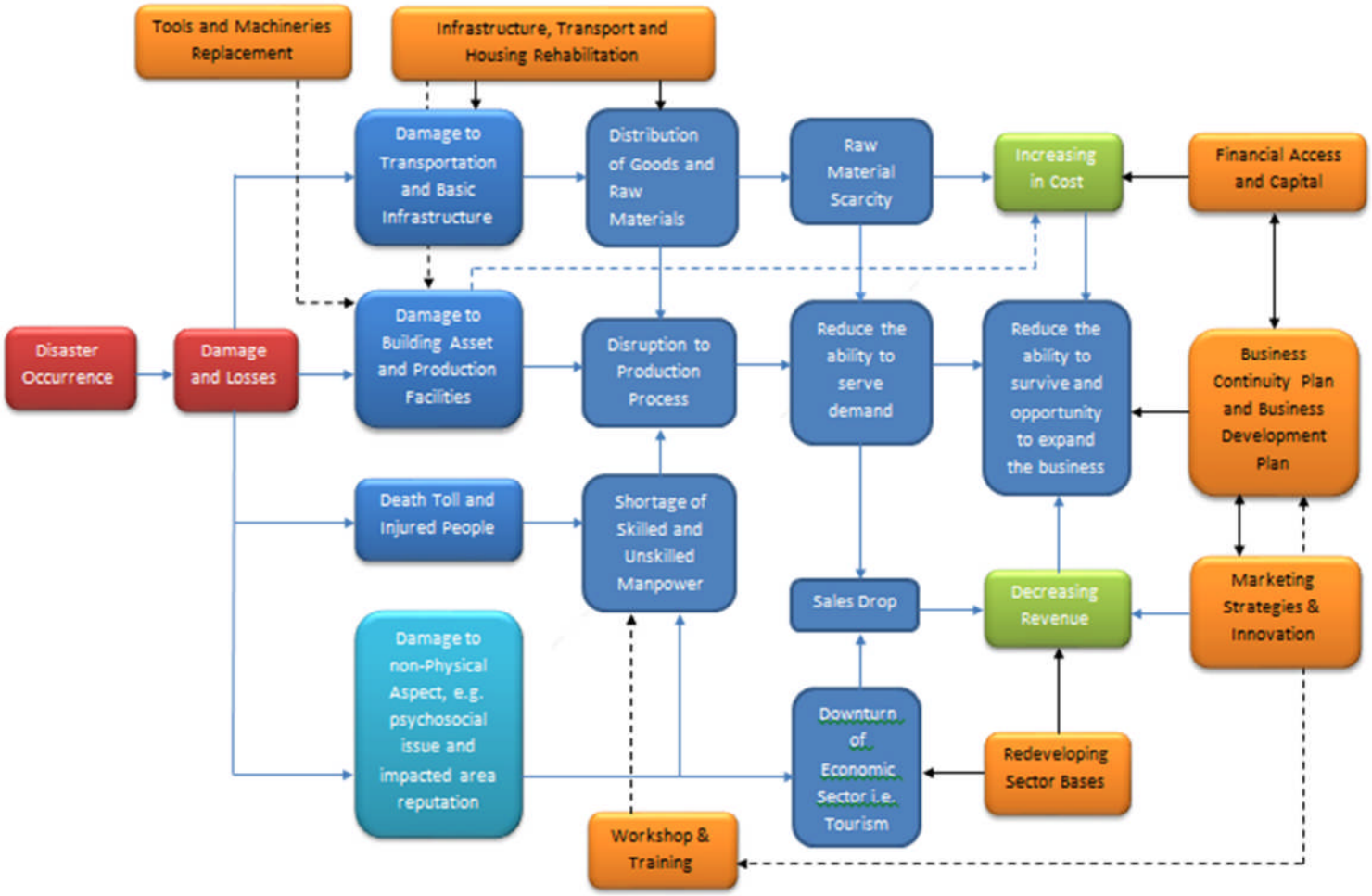
In addition, the dysfunction of public service owing to disaster, especially at banks and MFIs, could exacerbate the situation. Even though MFIs might have strategic roles due to their proximity to customers, and as 'recovery' actors that help to improve livelihoods and the economy, the majority of MFIs do not have a BCP (Mercy Corps Indonesia, 2014). Damage to the functioning of financial institutions as a result of disasters will have a direct effect on the recovery because the community will need financial institutions, specifically to take deposits, postpone installments, and borrow funds as well as for other bank services. Moreover, the function and role of MFIs for small business groups in rural areas is enormous.

When the MFIs collapsed in the aftermath of the disaster, the small and micro entrepreneurs also faced more loss and it was difficult for them to recover in a short period of time. This collapse could have been caused by two things (Mercy Corps Indonesia, 2014): namely, physical damage or infrastructure supporting MFIs' operational processes, and the paralysis of MFI services to the community (business actors). Mercy Corps, through its experiences in the Indonesia Liquidity Facility After Disaster (ILFAD) program, claimed that by preparing these microfinance institutions to operate quickly and effectively in the event of a disaster, then the MFIs could play a role during the time lag before cash aid or liquidity facilities(in partnership with commercial banks) is initiated.

7.5.2 Strategies to Revive the Local Economy

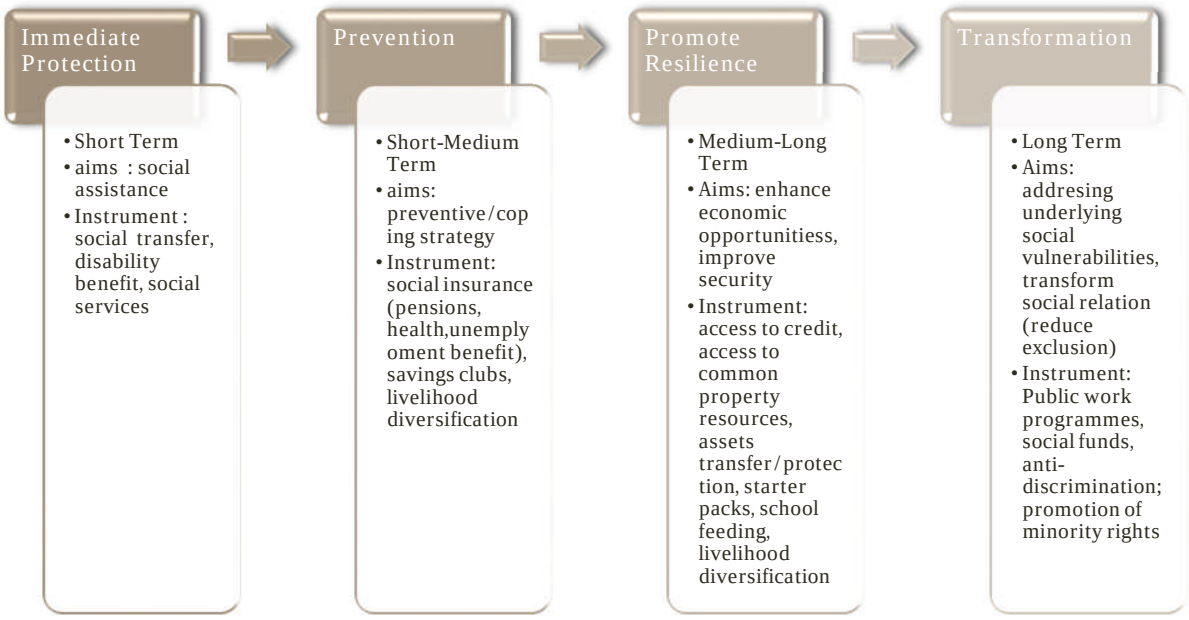
From empirical findings, the MSMEs issues in the Bantul recovery case are summarized in Figure 7.6.

Figure 7.6. Problems Mapping of the MSMEs' Recovery in Bantul Regency



In addition to the problems summarized above, Figure 7.7 below provides the general framework consisting of four stages that help with understanding the paths to economic revival, which include stages of protection, prevention, promotion and transformation (Balgos and Dizon, 2015). Usually, charity and donations are placed for the short term and on the first stage component of post-disaster financial assistance (Becchetti and Castriota, 2011), particularly early after a disaster, when media attention is high (Arendt and Alesch, 2015). In this early stage of recovery, much of this assistance is focused on the immediate needs following the disaster, but some organizations also provide aid for recovery, such as immediate repairs to homes and funding for long-term investment in housing, schools, infrastructure, and other critical elements of the community's wellbeing.

Figure 7.7. General Framework of Disaster Resilient Recovery



Source: Modified from Balgos and Dizon (2015, p. 143)

In addition, the second stage solution is financial assistance through portfolio microfinance: for example, micro insurance as preventive measure to avoid further economic shock to livelihood after disaster. In this case, micro insurance is required as a risk management system that is expected to back up low-income society and avoid increasing financial pressures. Some other financial products may be provided by local banks or MFIs (Mercy Corps Indonesia, 2014), such as:

— *Emergency savings.* These disaster emergency savings can be either voluntary or compulsory for all MFI's clients in disaster prone areas. These savings cannot be

withdrawn under normal conditions but can only be used by customers when they are in an emergency situation or disaster crisis.

— *Physical construction loans.* The loan is given to customers with lower interest rates to improve their home and/or place of business.
— *Business rehabilitation loans.* The loan is granted as a means to purchase raw materials, production equipment or trade equipment.
— *Micro insurance.* Losses covered can include loss of life, health, education and damage to business facilities.

The next strategy to be discussed in this sub-section focuses more on the third and fourth stages to revive the economy, especially the affected area based on the tourism industry, and to place MSMEs as economic prime movers.

7.5.2.1 Re-developing the local tourism industry

The local economy would be greatly affected by the impact of a disaster, especially in regions that are heavily reliant on the tourism sector. Even if tourism-related facilities can be quickly restored, the public perception of those destinations may not improve at the same pace. This is especially affected by the media, which tends to broadcast bad or misleading news which results in negative public opinion, so that a disaster-stricken area is unlikely to attract visitors and investors (Schwab, 2014). During the first year after the earthquake, the tourism sector in Yogyakarta Province slumped: for example, in Yogyakarta City, hotel occupancy rates and travel agency bookings also experienced sluggishness. This was mostly due to cancelled visits and deferred travel bookings which were influenced by the gossip about the insecurity level of visiting Yogyakarta after the earthquake (Shakuntala, 2007, pp. 177-8).

According to anthropological debates, the development of tourism will surely impact on the people living within the area by giving them an option to work, 'natural rotation of the workforce between tourism and agricultural sectors' (Nash, 1996, p. 20). Furthermore, they predicted the benefit would exceed the cost that may burden the wider society. In this case, Schwab (2014) argues that branding strategy is an essential component of economic disaster recovery in the most affected areas. The strategy might focus on tourism renewal or re-development in order to attract the new business investors and workforce. On the other hand, the other experts in tourism development also remind us that the benefits, either direct or indirect, might not work as planned. In numerous cases, tourism development initiated from outside a region will leave the

local people behind. Local government should anticipate the situation of the lower-paid local workforces and import goods and facilities from outside the regions that may cause the 'leakage' of revenue that should be earned from the development of local tourism (Nash, 1996, p. 21).

Similarly, the main challenge facing Bantul Regency post-earthquake was the re-branding and promotion of the tourism sector. Bantul has long been known for its multiple tourist attractions. As well as its natural beauty, Bantul is also recognised for its cultural values and historical venues, as well as being home to thousands of MSMEs supporting the shopping tourism experience. As the tourism industry consists of parts that closely interface one another, thus many sectors must also be taken into account: for instance, transportation and accommodation. For promotional purposes, all of these should be packaged attractively, so that within one itinerary, these destinations can be included together. Bantul Regency promotion should include all these potential attractions in order to give an open menu to tourists, especially for exploring all the tourist sites in Bantul, Yogyakarta and nearby areas: for instance, places like Parangtritis Beach, Gabusan Crafts Art Market and the Art Centre of Bagong Kussuadiardjo, and including the local art and cultural performances, e.g. ketoprak, jathilan, karawitan, gamelan, slawatan, sendra tari, wayang kulit, campursari, etc.

In tourism areas in southeast Asia, international tourists tend to look for a genuine and local life experience (Saputra and Rindrasih, 2012; Azmi et al., 2016). Their goal is not only to explore exotic and historical places but also to bring memories back to their home countries. It is no wonder that the shopping tourism of handicraft souvenirs has become one of the main activities whenever people visit Indonesia, including Yogyakarta and Bantul. Tourists often feel that their trip would be incomplete without some shopping time and buying something as part of the memories of their travels.

Bantul Tourism has been directed to become a sector that can boost Bantul regional revenue (Bantul Regency, 2008, p. 82). For that purpose, the government should take an active role in tourism development (Jenkins, C.L. and Henry, 1982). The GoI and JRF have already formally established IOM Marketing and Promotional Task Forces. Along with the village promotional teams, the Task Forces initiated the 'Free Tour Programme' to get attention from foreign tourists. In addition, the preservation of local heritage has been incorporated into the sub-component REKOMPAK project, which focuses on cultural heritage and has been implemented at the community level of four villages in Kota Gede, Yogyakarta and two villages in Klaten Regency.

However, the local government has suggested conducting an in-depth study of the shopping behaviours and preferences of both international and local tourists, and is thereby trying to be much more responsive to their expectations. This research may then be used for re-branding the shopping tourism clusters post-earthquake. Elaborating from various studies (Jenkins, C.L., 1982; Getz, 1993; Dredge, 2006), the local government is expected to have a certain level of understanding by conducting insightful research into the following issues:

— The roles of MSMEs in the local tourism industry landscape, by conducting an observational study of them to detect the shifting pattern of the products and services and their impacts on the local economy;
— The shopping behaviours and preferences of both international and local tourists, while trying to be much more responsive to their expectations in order to encourage minimum targets of longer stays and repeat visits;
— The branding strategy, including advertising themes that meet the need for attractiveness but are still in harmony with the local culture and values;
— The local government regulations, especially regarding investment incentives for the potential investors who will naturally see the investment risk in disaster-prone regions as higher than in other places;
— Periodic monitoring and evaluation to keep up the level of local community engagement, and to get feedback on the impact of existing tourism operationalization within their village area.

Finally, the government should anticipate the competing interests of the concerns of local economic development with other needs, such as social, cultural, and environmental loss. Thus formulation of the future sustainable development of shopping tourism within the framework of regular village development planning processes (e.g. *musrenbang desa/kecamatan*) is essential. These should be integrated with local business continuity plans, especially for the shopping tourism clusters to anticipate and deal with future disasters.

7.5.2.2 Re-starting the business

Even those businesses that do not receive direct damages may suffer extensive disruption from problems in infrastructure and/or the supply chain. Large companies within the community are generally already prepared with business continuity plans or have resources to ride out business interruptions or losses resulting from disasters.

Small businesses, however, are more likely never to reopen after a disaster or fail shortly after reopening (Schwab, 2014). Many local governments did not give sufficient assistance to local businesses with financial needs arising from disaster. Most local governments were observed as having little experience of helping local businesses remain in business in the community or helping them bounce back after disaster. They are more likely to have more experience trying to attract new business and industry to the community, than supporting the old ones' revival.

Business recovery means the ability of business entities to recover assets lost in disasters; the extent of adverse effects on business dependencies (e.g. suppliers, customers, and employees); and the ability to adapt quickly and appropriately to new realities in a post-disaster environment. In principle, the MSMEs' recovery activities are aimed at ensuring that their business can be revitalized and/or operate on an ongoing basis, and directed to be more resilient to shocks due to disasters. Based on lessons learnt and perceived needs of MSMEs in Bantul-Yogyakarta, we elaborated the essential strategies for MSMEs to re-start business, as follows:

— The settlement of non-performing loans for the affected enterprises: for example, through the support of government policies by which eligible borrowers (i.e. MSMEs) with post-disaster arrears are assisted in negotiating and restructuring their credit obligations in order to accelerate the business recovery;
— The improvement of the ability of UMKM to access various financing alternatives, including sharia schemes through micro finance institutions. If it was conducted in the form of revolving fund assistance, then the principles of transparency, fairness, independence of the scope of assistance and sustainability should be placed as the basic criteria. In addition, on the principle of self-reliance, other assistance must include capacity building of debtor business management – for instance, administration, book-keeping and business management – to overcome the post-disaster financial problems;
— The recovery of the MSME's production capacity and resources, including the replacement of the productive assets damaged by the disaster. In terms of improving competitiveness, there is a need for workforce capacity building through skills training, in accordance with the local need for excellent products;
— The improvement of the ability of MSMEs to penetrate the market locally, regionally and globally. The assistance can be focused on promotional and expo

events for the local products affected, as well as organizing the event to facilitate the relationships with potential buyers and investors;

— The creation of opportunities to improve the resilience and competitiveness of MSMEs, including workshops on digital marketing and product innovation, business development plans, and business continuity plans (BCP).

Research (Flynn, 2007) has shown that there is a need for government to formulate policy stipulating the importance of BCPs, especially in small business societies. He refuted the assumption that business owners and managers who have experienced many disaster events will automatically prepare for the next disasters without certain quality levels of planning. Moreover, it is stated that the existence of a qualified BCP is one determinant of efficient recovery (Flynn, 2007, p. 508):

> *Too little planning, on the other hand, can create problems for general by increasing the number of businesses likely to require disaster aid and increasing the disruption of services to the local population.*

7.6 Concluding Remarks

In most developing countries, including Indonesia, the traditional market and clusters of handicraft shops have become popular tourist destinations. Bantul, part of Yogyakarta Province in Indonesia, is well-known for its various handicraft clusters: for instance, Kasongan for pottery or Manding for leather-based handicraft. These village-based handicraft clusters were heavily damaged by the earthquake in 2006, which led to the disruption of livelihoods and tourism in that region.

Most MSMEs are vulnerable due to 'shocks' in the aftermath of disaster. In the context of Bantul and Yogyakarta, disaster caused by an earthquake was proven to greatly impact the financial capability of MSMEs. However, on the other hand, MSMEs within the tourism industry had an important role as one of the prime movers of the economy after the disaster. There are several insightful points within the process of post-disaster economic recovery in our case study, i.e. stimulant and affirmative policy, aid disbursement, financial access, partnership and community engagement, local culture and networks, as well as business continuity plans.

Based on the network analysis, it can be seen that for the entire process the actors from different levels (such as macro, meso and micro) strive together in the economic recovery process in the aftermath of disaster. The development of the MSME sector should be planned sustainably, and in Bantul, the development of MSMEs should be

continuously driven by the development of the tourism sectors along with all the relevant actors who either directly or indirectly interact with the tourism industry. This strategy can also be adapted for other regions by taking account of the specific conditions of each case study and its sector base, and primarily referring to its own recovery network.

Chapter 8. The Nexus of Post-Disaster Recovery and Development: A Synthesis from Disaster Recovery Governance in Bantul Regency

8.1 Introduction

In 2008, it was noted that Indonesia faced two major problems in disaster governance (Haifani, 2008, as cited in Kuncoro and Sartohadi, 2012). The first concerned the low level of public awareness in reducing disaster risk. The second was related to the mind-set of policymakers (whether in local or central government), which has not been reformed yet, as evidenced by most of the development plans, which failed to include integrated environment management and disaster risk reduction measures. A decade later, this latter problem has not been substantially resolved, except at the national level, where most of the reforms have been carried out. More effort is needed to strengthen local institutions and integrate disaster reduction approaches into development policies at every level, even at the village and community level (Mardiah, Andri N. R. et al., 2017).

Furthermore, as has been identified earlier in Chapter 2 (Section 3.3.), disaster can also be viewed as an opportunity to bring about sustainable development (McEntire, David A, 2004; McEntire, David A., 2014). Efforts can be mainstreamed within all phases of disaster management cycles, including disaster recovery. By designing a sustainable development agenda, the critical nexus of disaster and development can be embodied in attempts to create resilient recovery. However, if one compares recovery to other phases, then one will perceive recovery as the slowest and longest as well as most problematic phase (Kapucu, 2014, p. 42).

According to Ansell and Torfing (2015, p. 315), a collaborative form of governance is most needed whenever ‘no single actor has the knowledge and resources to solve complex societal problems’. In addition, owing to the complexity of post-disaster development issues - such as in economic and tourism redevelopment context (see Chapter 7) - where responsibility for policy making and implementation is shared amongst public and private sectors, then a shift toward governance is believed to encourage cooperation (Dredge, 2006). Thus, the important thing to be discussed in this chapter is the role of collaborative governance in many development scenarios, including in building resilient recovery for post-disaster development.

This chapter is a synthesis of the three previous evidence-based chapters, which discussed post-disaster recovery governance from a multi-level perspective. In particular, this chapter focuses on collaborative governance principles that have been applied – though without having been explicitly stated – to disaster recovery in Indonesia, and especially in Bantul Regency and Yogyakarta. Therefore, the research question that guides this chapter is: 'How can collaborative governance and networks in post disaster recovery contribute to local economic revival and resilient recovery for development?'. Objectives included within this chapter are (1) to construct a conceptual model to integrate post-disaster recovery into sustainable development policy and identify the essential elements of resilient recovery; (2) to develop a theoretical framework of collaborative governance in the context of disaster recovery, based on knowledge derived from the case study; and finally, (3) to formulate guidelines that would allow stakeholders to integrate resilient recovery into development policy.

8.2 Research Approach

8.2.1 Underpinning Theories

Governance can take the form of less-binding relationships, such as coordination and cooperation, to more formal relationships that involve mandated or formal partnerships. Collaborative governance emphasizes collaboration that is beyond mere coordination and requires the achievement of shared goals and shared decision-making through both inter-organizational and cross-sector efforts and relationships (Agranoff and McGuire, 2003). Along with the key principles identified in the collaborative governance literature, leadership is a pertinent element of collaborative and networked governance, wherein public managers and leaders help to mobilize, facilitate, and implement collaborative and cooperative structures (Kapucu, 2014, p. 45) to achieve set goals and take responsibility to engage stakeholders in deliberative ways (Wallis and Gregory, 2009).

Collaborative forms of governance continue to change and develop, 'fuelled by institutional complexity and political fragmentation and driven by the recognition that no single actor has the knowledge or resources to solve complex societal problems' (Ansell and Torfing, 2015, p. 315). Emerson et al. (2012, p. 7) have formulated an integrative framework for collaborative governance, named 'the collaborative governance regime'. The framework contains three elements: system context, drivers

and collaborative dynamics. System context consists of, amongst other things: policy and regulatory frameworks, political dynamics (e.g. power relations), network connectedness, level of conflict, trust, socio/economic/cultural diversity and resource conditions. Drivers can be divided into four components: leadership, consequential incentives, interdependence, and uncertainty. The core element of this regime is collaborative dynamics, which consists of three components: principled engagement (i.e. discovery, definition, deliberation, determination), shared motivations (i.e. mutual trust, mutual understanding, internal legitimacy, and shared commitment), and capacity for joint action (procedural/institutional arrangement, leadership, knowledge, and resources).

Meanwhile, from the disaster literature's point of view, the factors which made the community able to recover successfully, among others (Davis and Alexander, 2015): minimum deaths and injury to members; culturally and environmentally sensitive design of the settlement and its dwelling; a high level of participation by the beneficiaries; reconstruction made also as an effective generator of livelihood; organizational support; inspired people; and regional economic condition. Furthermore, the four stands of recovery were identified as follows: 'vision and leadership, resources, participation and ownership, as well as organization' (ibid. p.16).

8.2.2 Methods

This chapter provides a synthesis of the empirical chapters, supported by a discussion of relevant literature. It has two streams of analysis: explorative analysis using thematic coding in order to conceptualize the model; and then compares them using indicators provided by existing literature on collaborative governance regimes and other governance frameworks, such as crisis and/or risk governance, and a discussion of many cases of recovery in Indonesia and other parts of the world.

8.3 The Interface of Disaster Recovery and Development

Recovery is a long process that offers many opportunities to rebuild and redevelop resilient communities and development (McEntire, David A, 2004; Kapucu, 2014). It is not an exaggeration to say then, as many scholars have, that the goal of a successful recovery is not just to return a society to pre-disaster conditions, but to make it better and safer, with an increase in resilience in the future (McEntire, David A., 2014). Building community resilience generally requires time, persistence and consistency. This is because post-disaster recovery generally takes a long period of time, even for

people return to only their normal lives (Kapucu, 2014). The resilience of communities to disasters before the disaster occurs and during the recovery period is expected to enhance their ability to recover quickly in the future (Sunarti, 2013). Furthermore, a resilient recovery serves as the bridge that integrates the recovery process into sustainable development.

In order to understand the interface of disaster recovery and development more closely, the next discussion will focus on (1) conceptual models and discussions of the essential elements needed for resilient recovery; and (2) a framework derived from the three previous empirical chapters, followed by discussion of relevant factors (i.e. influential, determinant and driving factors).

8.3.1 A Conceptual Model of Resilient Disaster Recovery

8.3.1.1 A Conceptual Model: from Resilient Recovery to Sustainable Development

Natural or man-made disasters certainly impact on the community. Hence an understanding of the disaster must be holistic, including from within, to understand the interaction between unplanned actions and their unintended consequences (Maarif, 2010). In fact, the strategies applied in the pre-disaster phases certainly impact the ways in which communities and agencies respond to abnormal situations that arise because of disaster (Arendt and Alesch, 2015). When dealing with a long-term social and economic problem exacerbated by disaster, there needs to be a more thoughtful process involved, rather than simply aiming for quick and instant results (Waugh and Streib, 2006, as cited in Kapucu, 2014).

This points to the importance of pre-disaster recovery planning, as well as efforts to link disaster recovery to economic development. From the empirical findings, it can be concluded that not only basic needs, shelters or cash are needed for survivors, but also mutual trust, shared goals and social learning, which drive sustainable disaster governance. In addition, a community's social capital, in the form of existing social networks and interconnectedness, can be interpreted as a form of 'informal insurance', helping disaster-affected people to stay, access resources, and engage in recovery planning and implementation (Schwab, 2014, pp. 134-5). Referring to the Sustainable Livelihood Framework (SLF), introduced by International Development Studies, sustainable livelihood is described as follows (as cited in Nurhadi, 2015, p. 109):

> *A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope and recover from stress and shocks and maintain or enhance its capabilities and assets, while not undermining the natural resource base.*

From the definition above, it can be inferred that social resources are acknowledged as essential assets to support livelihood to be more sustainable. This is in addition to social, human (e.g. skills, health, physical strength), natural (e.g. land, water), physical (e.g. production tools, livestock, infrastructure), financial (e.g. credit, capital, insurance), which are also part of the system of livelihood assets (UNDP, 2008a).

The mechanism for integrating the development of community resilience against disaster into development programs should start in the pre-disaster phase, especially when a disaster has not yet occurred. However, such integration can also be carried out in the post-disaster stage and should be implemented continuously, and embedded in a regular development process (Sunarti, 2013). Taking into account various natural disasters, areas, and their different characteristics, it is difficult – if not impossible – to provide a detailed blue-print for all types of disaster recovery cases. There is no one-size-fits-all solution, as the disaster management and recovery patterns of a region are strongly affected by local conditions (INT1, as documented in BAPPENAS, 2015b). Therefore, in this thesis the researcher proposes a conceptual model that has been abstracted from the thesis as a whole. This is shown in Figure 8.1.

Referring to the proposed model, a community-based consensus is essential to achieving resilient recovery, and resilience becomes a supporting condition for sustainable redevelopment. Resilience is defined as, 'the ability of a social system to respond and recover from disaster ... as well as the post-event adaptive processes that facilitate the ability of the social system to reorganize, change and learn in response to a threat' (Guarnacci, 2016, p. 181). Community-based approaches work when they seek to encourage understanding amongst stakeholders. This type of social learning plays a critical role in, and underpins, the institutional, policy and technological assessments subsequently needed in the building of resilience. It appears that in the aftermath of a disaster, some survivors adapt to the crisis by depending solely on their own informal social networks. However, to better support survivors and in order to achieve a smooth transition from emergency relief to recovery and from recovery to development, external agencies involved in the recovery should have a clear partnership strategy and engage local partners from the beginning. Thus any strategies that are chosen should be firmly rooted in local communities' needs. Indeed, what makes the approach

applicable is if true participation takes place. It is expected that this would produce shared decisions and team-derived actions concerning many things, such as prioritised activities and (if necessary) financing the community recovery process.

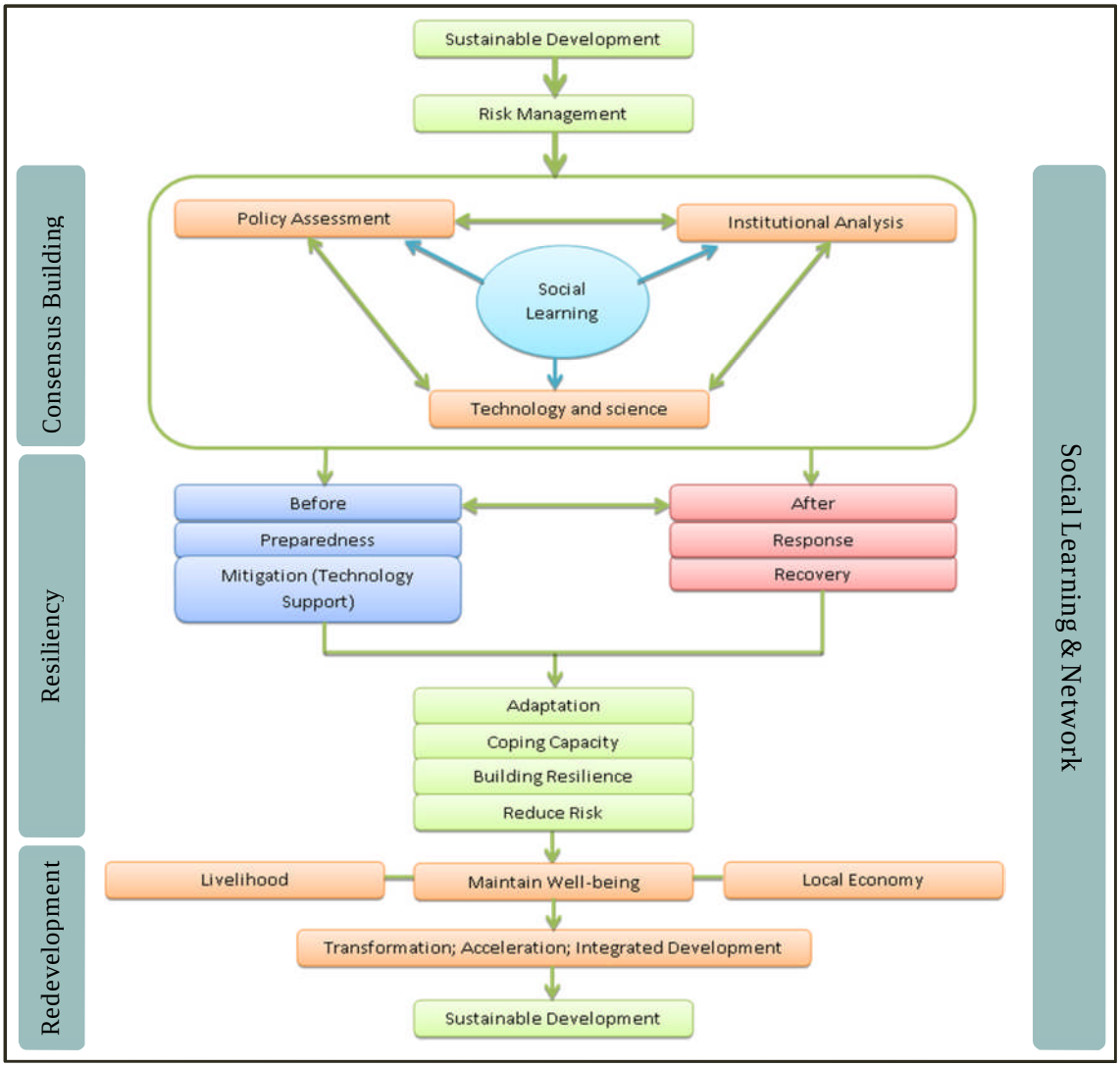
The ability to cope is related to the capacity to anticipate, deal with, restrain, and recover situations from the impact of hazards (Sunarti, 2013). However, limited access to resources prevents businesses and people from successfully coping with the crisis. Subsequently, community resilience can be built by increasing knowledge of risks, tools and resources to deal with threats and create opportunities. One of the initial steps in building the resilience of nations and communities against disasters is to be aware of the importance of disaster risk reduction (DRR) and encouraging community-based DRR. Community-based DRR has a strategic position, given the wide and diverse threats and potential disasters that need the active participation of the wider community (Sunarti, 2013).

Based on data from the Centre for Research on the Epidemiology of Disasters (CRED, as cited in Nurhadi, 2015, p. 106), poor countries experience the worst impact of disasters and it is the poor who suffer most. Vulnerable areas in the Bantul region have a high population density and a high residential area density (Kuncoro and Sartohadi, 2012, p. 80). Unfortunately, a recent study conducted in Bantul (Kuncoro and Sartohadi, 2012, p. 85) showed that the lowest level of education on average was found in the most vulnerable areas. In addition, the lowest average level of income was found in the most vulnerable areas. Thus, income levels and education levels are correlated with levels of vulnerability. The social and economic conditions underpinning society also have the opportunity to magnify the threats and contribute to disasters. Disruptive disasters thus can be treated as a window of opportunity that breaks that vicious circle by allowing for the emergence of resilient recovery initiatives. In principle, disaster recovery should be based on a vision to build back better and safer, which is implemented in the systematic disaster risk measures toward resilience.

Community resilience can also be enhanced through economic improvement (Sunarti, 2013, p. 9). As an illustration, those who are poor usually have low income levels, i.e. between 30-50 thousand rupiah per day. Most income is spent on daily needs; as a result, the accumulation of financial capital is difficult to achieve. The biggest impact experienced post-disaster was the inability to pursue education higher than senior high school and build earthquake-proof housing (Nurhadi, 2015, p. 112). As has been explained in detail in Chapter 7, for middle-income families or those who run small

businesses, complicated procedures, high interest rates, and a lack of collateral prevent people from accessing new capital. These kinds of disadvantages increase the level of risk. Livelihood recovery of disaster victims should be sustainably integrated into the regular development and poverty alleviation strategy, as well as in the DRR program (Sunarti, 2013, p.77).

Figure 8.1. Conceptual Model: 'From Resilient Recovery toward Sustainable Development'



8.3.1.2 Discussions of the Essential Elements for Resilient Recovery Model

The essential elements of disaster recovery include social learning, consensus building, networks, resiliency and redevelopment.

Social learning

Recovery has no definite end point; it depends on communities' expectations concerning post-disaster recovery, which might change over time as the process unfolds. Disaster provides opportunities for communities to learn from their experiences and from any phases of the disaster management cycle (O'Brien et al., 2010; Schwab, 2014, p. 8). Ideally it will lead to the formulation of a sustainable recovery framework. The process should enhance stakeholders' engagement and give the community the opportunity to truly engage. Community participation means that people's contribution in the disaster management cycle can begin with basic steps and end in achievement and institutionalization in the community (Jahangiri et al., 2011, p. 82).

Scholars agree that recovery is not achieved merely when all damaged houses or destroyed buildings are restored or replaced. In the early stages of the Yogyakarta recovery, critics said, '[the application of) regional autonomy requires social reconstruction to guard the physical or building reconstruction, while the central government tends to prioritize the physical construction of buildings' (Shakuntala, 2007, p. 83). According to Johnston et al. (2012, p. 252), the main point of recovery is 'how society organizes, mobilizes and coordinates the diverse range of organizational and professional resources that can be called upon to assist recovery'. As Nigg (1995, p. 5) pointed out:

> *If one takes (the) perspectives that community recovery can be equated with outcomes in the built environment solely, the sociological significance of what really transpires in the post-disaster experience is missed. Recovery is not merely an outcome, but rather it is a social process.*

Therefore, recovery is no longer understood as a linear process, but rather as the interactive process between decision makers and communities in broader sense, including households, businesses, and various community groups or institutions. However, according to Shaw (2013), one should remember that there might be a trade-off between deliberative processes, speed and the quality of resources.

Consensus Building

A number of scholars have different opinions on the recovery process. Revisiting the recovery as process, Olshansky (2005) contends that 'recovery' should be placed at its minimum target, that is a completed housing reconstruction and economic activities functioning as they were pre-disaster. Many others understand recovery as a 'return to

normalcy'. However, what is the meaning of 'normal' in terms of disaster recovery? Arendt and Alesch (2015, pp. 150-151) discuss 'normal' with reference to 'what has been achieved when the community develops to levels of system performance that are likely to have been achieved had the disruption not occurred'.

Nevertheless, they disagree with the idea that recovery meant rebuilding exactly what was there before the disaster. They contended that 'if the pre-disaster community was vulnerable to this disaster, chances are that, if it is rebuilt just as it was, it will be similarly vulnerable to subsequent disaster' (ibid., p. 151). The challenge for local government and community members is to build a better community, one that is more resilient than that which existed prior to the disaster, but which still embodies the community's essential nature and core competences. Thus, recovery should embody a sense of 'rebuild back, stronger than ever' (Phillips, 2009, p. 21).

Defining shared recovery goals can enhance collaboration and overcome any possible differences (Schwab, 2014, p. 73). Therefore, communities must first decide on a clear definition of recovery from many perspectives, such as environmental, physical, economic, social, institutional, etc. Whilst the discussion of detailed indicators is still evolving, general indicators of successful recovery are widely known: speed and quality (Olshansky, 2005). The speed of recovery is essential to many businesses and the public, both of whom have experienced great loss and suffered psychological stress (Schwab, 2014, p. 9). Therefore, realistic timeframes and outcomes should be clearly defined and monitored.

Networking

From an economic perspective, recovery is influenced by former socioeconomic levels; the higher the socioeconomic level, the more likely businesses are to recover to the same level of prosperity that they experienced prior to the disaster (Olshansky, 2005). Moreover, community diversity, according to Johnston et al. (2012, p. 253), has determined how well the community responds to recovery demands, and also influences their ability to use resources and past experiences to fulfil needs and to plan future strategy.

In addition, it is not only socioeconomic levels but also social networks that play an important role during periods of recovery. This means that the level of attachment individuals have to certain networks affects how quickly recovery can take place. This is related to the fact that great support from friends and families will accelerate the

recovery process (Johnston et al., 2012). Unlike man-made disasters, natural disasters bring some 'advantages'. Ride and Bretherton (2011) argue that a perception amongst victims who believe a natural disaster comes 'purely' from outside the human, as well as beyond the habits of the local community, encourages them to become tied to one another and to stand up to confront the crisis collectively. Furthermore, communities with a high degree of horizontal integration will form a strong network. This would privilege them with the possibility of becoming problem solvers. Conversely, a community with a low degree of horizontal integration, to some extent, would lose this privilege (Warren, 1963, as cited in Berke et al., 1993).

In line with this, the idea of social capital implies that connections can be profitable; like any other form of capital, 'we can invest as well as expect a decent return from it' (Field, 2003, p. 12). Field (2003, p. 3) underlined the fact that 'if we do share a value, we are much more likely to cooperate to achieve a mutual goal'. In order to achieve a certain level of livelihood and local economic recovery, the idea of a bonding community that helps each other to cope with disaster can be used as a reference (Woolcock and Narayan, 2000, p. 226):

> *When a people on hard times, they know it is their friends and family who constitute the final safety net. Intuitively, then, the basic idea of social capital is that a person's family, friends, and associates constitute an important asset, one that can be called on in crisis, enjoyed for its own sake, and leveraged for material gain. What is true for individuals, moreover, also holds for groups.*

Resiliency

Resilience is not only the domain of government, but also of individuals, organizations and businesses. Resilience is claimed to allow communities to respond and recover more effectively from disaster (Schwab, 2014, p. 21). Furthermore, resilience is also used interchangeably with the term 'community sustainability' (Arendt and Alesch, 2015, p. 169). It is claimed that opportunities to advance community resilience are brought about during the long-term recovery from a disaster (Godschalk, 2009, as cited in Schwab, 2014, p. 25). Therefore it is important to embed the concept of resilience within the wider framework of sustainability aiming to preserve resources and opportunities for future generations.

It is also claimed that it is the practice of everyday resilience when responding to daily stress that best equips organizations to deal with disasters and other unexpected challenges (Schwab, 2014, p.31). According to the 2012 Report (p. 2), 'Disaster

Resilience: A National Imperative, the National Research Council provided a summary explanation of the interconnection between resilience and recovery, as well as other components in disaster management (as cited in Arendt and Alesch, 2015, p. 170):

> *Developing of culture of resilience would bolster support for preparedness and response, and would also enable better anticipation of disaster and their consequences, enhancing the ability to recover more quickly and strongly. Resilient communities would plan and build in ways that would reduce disaster losses, rather than waiting for a disaster to occur and paying for it afterward*

In the context of the nexus between disaster and development (Anderson, 1985; Pelling, 2003; Collins, 2009), it is necessary also to note the link between 'suffering/loss' and the element of 'coping ability'. Disaster can be assumed to be the prominent sign of development failure; meanwhile, development also can be used as an integrative process to reduce vulnerability to disaster. Moreover, development is said to have failed if the communities have a low capacity to cope with disaster, which implies that suffering and long-term loss cannot be minimized.

Post-disaster redevelopment

Whenever disasters affect the economic activities of key employers or major businesses, it is likely that there will be long-term hardship for the surrounding community (2009, as cited in Arendt and Alesch, 2015). The problems that might arise involve permanent employer relocation, shutdowns, disruption to major supply chains, or other chain reactions in the business community. They will cause major and possibly enduring disruption in the local and regional economy. The failure to bring the development back on track may lead to a disparity between regions.

Schwab (2014, p. 84) argued that sustainable and resilient economic recovery planning should focus not only on the rebuilding of damaged structures but also issues on the resumption of business activity and retention of the local workforce. Economic recovery is a complex policy area that is not easily developed through traditional government action. Instead, it requires participation from the private sector (Schwab, 2014, p. 84) as well as the community, as the community depends on its economy for survival, and the business often depends on the community within which they exist for their viability (Arendt and Alesch, 2015, p. 87).

8.3.2 Collaborative Platform for Disaster Recovery Governance

8.3.2.1 Collaborative Platform to Integrate Recovery into Development Policy

Disaster recovery is a longer and more complicated process than disaster response; it can take years before the entire disaster area is completely redeveloped (Kapucu, 2014). The complex nature of recovery planning and efforts requires pre-disaster and post-disaster collaboration between different stakeholders including public, private, non-profit organizations and the broader community (Kapucu, 2014, p. 42). A strong foundation for collective action can be developed through an inclusive recovery planning process. Implementation will be more collaborative and well-coordinated if there is active engagement between government agencies and the public in decision-making, policy-making and program design (Schwab, 2014).

Below is the proposed disaster recovery governance platform (DRGP) that has been derived from the whole chapters in this thesis. It has been abstracted from a dialogue between the empirical chapters, existing theories and recent discussions of disaster and resilience in the context of sustainable development.

Table 8.1. Disaster Recovery Governance Platform (DRGP) based on Governance Regimes and Extant Disaster Studies

No.	Proposed Component of DRGP	Empirical Findings	Other Disaster Literatures	Risk and Collaborative Governance Regimes
A.	Influential Factor: Pre-Disaster Conditions, Systems and Context			
a.1	Policy and Regulatory Frameworks	Chapter 5	Lassa, J. (2013)	Emerson et al. (2012, p. 7)
a.2	Political Dynamics	Chapter 5 Chapter 6	Enia (2016)	Emerson et al. (2012, p. 7)
a.3	Global Platform: e.g. Sustainable Development Goals; Sendai Framework	Chapter 5	Djalante, Riyanti et al. (2012)	Tierney (2012)
a.4	Socio Cultural Resources: e.g. trust, social relations, etc.	Chapter 6 Chapter 7	Kumara and Susetyo (2008); World Bank (2012) Kusumasari and Alam (2012b); Davis and Alexander (2015); Dokhi et al. (2017)	Emerson et al. (2012, p. 7); Huxham et al. (2000, pp. 351-2); Silvia (2011, p. 70)
a.5	Local Collaboration History	Chapter 6 (Households) Chapter 7 (MSMEs)	Nurhadi (2015)	Emerson et al. (2012, p. 7)
B.	Driving Factors: Encouragement to Initiate and Accelerate the Process			
b.1	Network Leadership	Chapter 6	-	Silvia (2011); Emerson et al. (2012, p. 7); Huxham et al. (2000, p. 353)
b.2	Consensus Building and Shared Understandings	Chapter 6 Chapter 7	World Bank (2012)	Silvia (2011)
b.3	Networked and Well-Connected Communities	Chapter 6 Chapter 7	Pelupessy et al. (2011); Guarnacci (2016)	-
b.4	Mutual Needs or Interests	Chapter 6 Chapter 7	-	'Interdependence' as cited in Emerson et al. (2012, p. 7)
b.5	Commitment	Chapter 6	-	'Thuggery... be active or get out' as cited in Huxham et al. (2000, p. 353); Silvia (2011)
b.6	Incentives and Stimulants	Chapter 6 Chapter 7	-	Emerson et al. (2012, p. 7); Huxham et al. (2000, p. 340, 353)
C.	Determinant Factors:			

No.	Proposed Component of DRGP	Empirical Findings	Other Disaster Literatures	Risk and Collaborative Governance Regimes
	Post-Disaster Management Essentials			
c.1	Shared (and agreed) Goals, Plan and Guidelines with a sense of ownership	Chapter 5 Chapter 6	Saputra and Rindrasih (2012)	Huxham et al. (2000, p. 351)
c.2	Institutional Networks with Legitimate Arrangements	Chapter 5 Chapter 6 Chapter 7	Lassa, J.A. (2015); Bisri (2016); Kusumasari (2014a); SFDRR, as cited in UNISDR (2015)	Emerson et al. (2012, p. 7)
c.3	Leadership and Key Organizations	Chapter 5 Chapter 6	Subagyo and Irawan (2008); Kusumasari (2014b); Davis and Alexander (2015)	Emerson et al. (2012, p. 7); Silvia (2011, p. 69)
c.4	Capacity and Capability of Key Organizations	Chapter 5 Chapter 6	Indah et al. (2008); Kusumasari and Alam (2012a); Kusumasari (2014a)	Silvia (2011, p. 67)
c.5	Financing and Aid Disbursement	Chapter 5 Chapter 6 Chapter 7	Resosudarmo et al. (2012); Kusumasari (2014a)	Huxham et al. (2000, p. 353)
c.6	Strategies and Affirmative Policy	Chapter 5 Chapter 6 Chapter 7	Indah et al. (2008); Basuki (2008); Yusuf (2014); Kusumasari (2014a)	-
c.7	Communication and Exchange of Resources e.g. personnel, knowledge, data and information, equipment, finance, and legitimacy/power,	Chapter 5 Chapter 6 Chapter 7	Badri et al. (2008); Davis and Alexander (2015)	Huxham et al. (2000, p. 340); Emerson et al. (2012, p. 7); Ansell and Torfing (2015);
D.	Principle Elements: Mainstreaming throughout the Governance Process			
d.1	Social Learning	Chapter 6 Chapter 8	Maarif (2010)	-
d.2	Partnership, Participation and Empowerment	Chapter 6 Chapter 7	UNDP (2008a); World Bank (2012); Yusuf (2014); Davis and Alexander (2015)	Huxham et al. (2000, p. 340)
d.3	Resilience and Sustainability	Chapter 6 Chapter 7 Chapter 8	Alexander et al. (2006); UNDP (2008a); Guarnacci (2012); World Bank (2012); Sunarti (2013); Seng (2013); (UNISDR, 2015)	-
d.4	Transparency and Accountability	Chapter 6	UNDP (2008a); World Bank (2012)	-

8.3.2.2 The Factors: A Discussion of What Works, What Does not Work, and Why?

A recovery is said to be successful if it is able to balance between various criteria, including, amongst others, speed and quality (Olshansky et al., 2012), and sustainability (INT10, as documented in BAPPENAS, 2015b). However, it takes a longer period of time until people return to normal life. As an illustration, in Japan, a developed country with a relatively well-performing disaster management system, one year after the earthquake and tsunami in Tohoku Region, many people still lived in refugee camps, a quarter of businesses had not yet recovered and some businesses were forecast to never re-open (Sunarti et al., 2013).

If a disaster is not handled swiftly and quickly, then the prolonged disaster will impact upon the economic circumstances of local families, thus disrupting the functioning of the family and social stability (Sunarti et al., 2013). Meanwhile, an improvement to quality is indeed essential, and this can be enforced through planning; plans can be used to determine recovery steps and further particular development phases as early as possible. As soon as data of damage and loss is provided, the plan can be immediately mobilized, during the earliest possible recovery period (INT10, as documented in BAPPENAS, 2015b).

Success and failure in disaster recovery governance is affected by many factors, most of which have been listed in the proposed DRGP (see Figure 8.1). In order to understand these factors and before being discussed further, a working definition is needed. A working definition for the ‘determinant factors’ (C) used within DRGP is the essential managerial components applied during the post-disaster recovery period that most likely determine the success or the failure of the recovery process, while the ‘driving factors’ (B) are described as the components that help to initiate and accelerate the recovery process. The ‘influential factors’ (A) are defined as the pre-disaster conditions, system and context that altogether or partly affects the recovery process in positive ways or in reverse. Lastly, ‘mainstreaming elements’ (E) are basic principles that should always be referred to and considered in all activities and throughout the recovery process.

Decision-making processes that seek to achieve consensus-building (b.2) should adopt a community-based inclusive approach, which encourages greater involvement (d.2) of marginalized groups, especially women and the poor. Inclusiveness can start from the

lowest level, the neighborhood and village environment, where communities are invited to identify needs and strategies for disaster risk reduction, response and recovery (b.4). The disaster recovery approach is a multistage approach, with concurrent and overlapping streams and stages. A communicative decision-making process (c.7) and participatory planning will enhance accountability (d.4) and program ownership (c.1) throughout the recovery process (i.e. rehabilitation and reconstruction), wherein communities voluntarily take an active role in improving their own lives (d.2). It will further have an impact upon the decrease in communities' complaints and the increase of conflict resolution (d.1).

In the context of Bantul and Yogyakarta, the fulfillment of basic needs, housing demand, livelihood recovery, infrastructure and local economic revival are streams that occur simultaneously and which are interrelated. Furthermore, the involvement of international agencies and international NGOs in official government projects has largely followed the above mentioned patterns, albeit within a wider portfolio that includes the provision of temporary shelter, access to finance and the rehabilitation of MSMEs. However, on top of that, the arrangement of institutional networks (c.2) should be based on a common understanding (b.2) of goals in the form of, amongst others, joint planning and/or binding procedures (c.1). The commitment (b.5) of local actors to agreements is crucial for their long-term sustainability (d.3). According to Gray, 1989, as cited in Huxham et al. (2000, p. 351), 'agreeing a definition of joint purpose tends to be difficult for collaborations because of the diversity of individual and organizational goals, some of which may be conflicting'. Thus, a good leader (c.3) is said to be a reflective practitioner who fully understands the essential issues involved (a.1-3) in collaborative processes (b.1) (Argyris and Schon, 1974, as cited in Huxham et al., 2000).

The capacity (c.4) of network leadership (b.1) is required if a wide range of organizational and institutional networks are involved. Thus, an organization is not only expected to have internal leaders with strong leadership characteristics (c.3), but also the capability (c.4) to organize the implementation of the plans amongst the organizations involved in the disaster recovery agenda (b.1). As Huxham et al. (2000, p. 353) argues, the 'dominance of a governance area by one or a number of organizations over others can provide the stage for the creation of a framework within which independent and collaborative activity in the arena can take place'.

The former Secretary General of the Indonesian Society for Disaster Management (MPBI) argues that economic development, to some extent, distances communities

from their culture and undermines the essentials of local wisdom. Furthermore, in his view, each region should have local wisdoms (a.4) for tackling disasters (Tim Teknis Nasional, 2007). Without social and cultural resources (a.4), or a history of collaborative work (a.5) within communities, then 'it generally takes a long time – at least two years in many cases – and many cycles of direction setting, action and trust building for a collaborative relationship to settle in' (Huxham et al., 2000, p. 352). Besides influencing the time span of recovery, trust will affect the decision or continuity regarding whether or not to stay fully engaged in the network's mission (Silvia, 2011).

In addition to the cultural values and social resources that already exist in the community, local government capacity (c.4) also plays an important role in mitigating and controlling post-disaster conflict (INT10, as documented in BAPPENAS, 2015b) and in the transition period, where the recovery project is transferred from central to local government, before finally ending (INT6, as documented in BAPPENAS, 2015b). Capacity-building activities of local governments to ensure recovery should be focused in synergy and in accordance with mutually agreed plans (c.1). This is important because the required capacity of key organizations (c.4) differs considerably from that in non-essential organizations. On this note, Silvia (2011, p. 67) argues that, 'increasingly, the capacities required to operate successfully in network settings are different from the capacities needed to succeed at managing a single organization'.

In the implementation of recovery programs, financial accountability and professional administrative capacity (c.5; d.4) is also required. Emergency response operations require large aid flows within a very short period of time and amongst uncertain conditions, which can pose a risk of corruption. If not properly regulated (a.1), this will also affect the accountability (d.4) underpinning the long-term recovery plan. Although legally regulated - for example, in Indonesia Law no. 24/2007 stated that misuse of disaster funds and assistance will entail more severe sanctions than other corruption crimes – it is still worthwhile embedding collaborative and mutual monitoring through agreed joint procedures (c.7). Therefore, establishing a mechanism for tracking aid has always been a very important issue.

In relation to affirmative policies (c.6) and their sustainability (d.3), the implementation of microfinance and revolving funds in post-disaster situations is very challenging, since there is a need for it to reach beneficiaries quickly and to ensure rigorous accountability mechanisms (d.4). Policy needs to also reflect and respond to

the needs of women (c.6), especially because many MSMEs are run by women, for example in the snack food industry and batik. As a result of the JRF recovery project, more than 40% of microfinance loans have been distributed to women (Sekretariat JRF, 2011). Assistance to women serves to strengthen the role of women in the post-disaster recovery process in particular and family resilience in general.

Disaster-affected communities should have access to information on emergency response and recovery (c.7), as well as their rights. Therefore, a recovery program should be identified and prioritized through a participatory process (d.2) within affected communities, and 'participation generally means inclusion of stakeholders in the decision making processes that affect them' (Huxham et al., 2000, p. 340). In the early stages, communities should be involved in planning, implementation and monitoring, so they can convey their aspirations. In addition, the active participation of affected communities in emergency and post-disaster response operations will reduce the risk of corruption in aid delivery (c.5). Empowerment can be understood as another kind of participation, meaning that stakeholders should be involved, 'to take a central, rather than peripheral, role in the collaboration, including having direct authority for spending its budget' (Himmelman, 1994, as cited in Huxham et al., 2000, p. 340).

Partnership (d.2) is very important in disaster governance, and is more than merely establishing a forum. Rather 'this has to be community-driven. Initiatives should come from private sector and civil society. We do appreciate the establishment of those forums. However, without partnership, it is pointless', (INT9, as documented in The Ministry of Village Disadvantaged Regions and Transmigration, 2015). In addition, the same respondent argued that it should be based on the 4P principles – public, private and people/community partnership. This is an extension of the public private partnership concept. In this case, the involvement of the community has been shown to be very important, since a community-driven effort can help to mobilize local resources (c.7) and initiatives (Huxham et al., 2000). Furthermore, exchanging (or even pooling) resources will determine what the network actually can accomplish (Silvia, 2011). In fact, the network can encourage collaboration, if only there is willingness from most key participants in the network to share their resources to be used for the agreed purposes.

8.4 Resilient Recovery Discourses for the Disaster Recovery Governance Platform: the ‘What’, ‘How’ and ‘Who’

There are two similar conceptual understandings, though they are not the same (Sunarti, 2013). First, development that is based on community disaster resilience, and secondly, integrating community disaster resilience initiatives into development. The first concept emphasizes the greater initiative of development actors to consider disaster in a series of activities of development, such as planning, funding and implementation as well as monitoring and evaluation. Meanwhile, the second concept emphasizes the initiative and pro-activeness of disaster management actors to provide various program inputs and action plans for disaster management, then propose and encourage development to consider, match and integrate these programs within its relevant development programs. Thus, these two understandings imply different mechanisms, although both lead to the shared goal of becoming a more resilient nation.

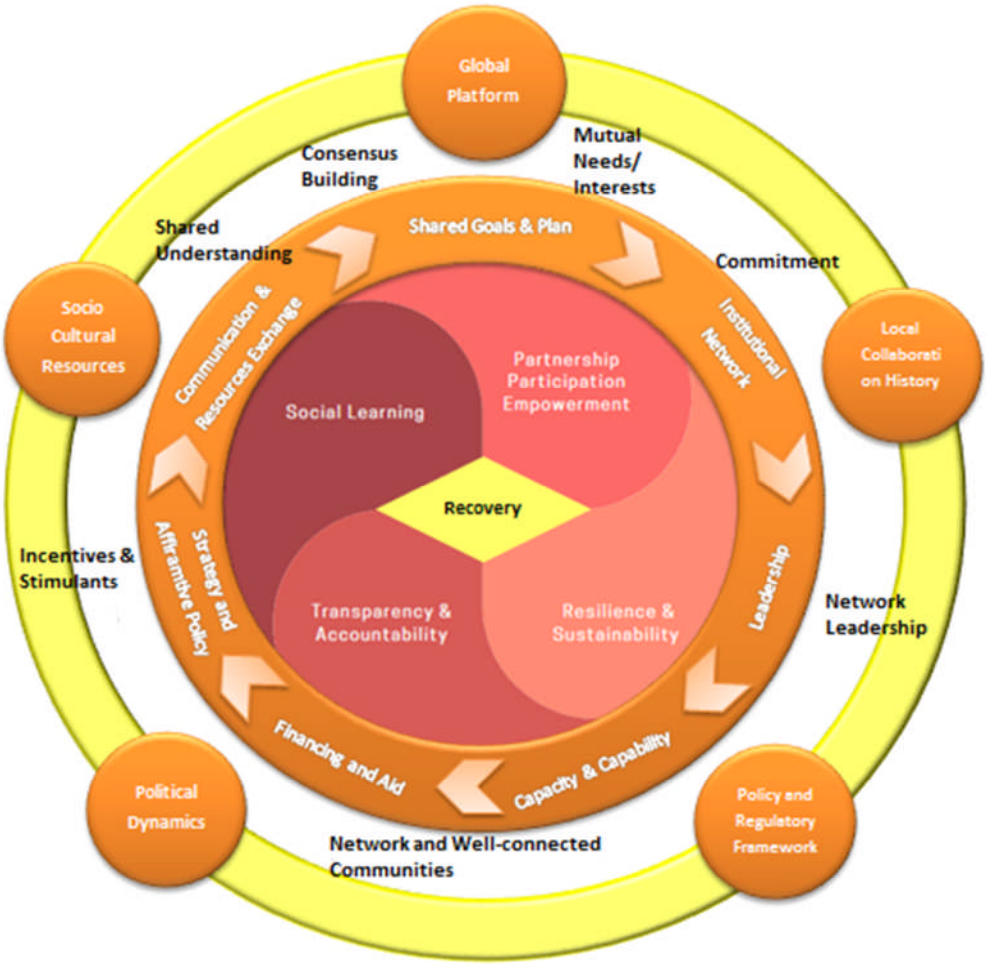
Throughout this thesis, the researcher has proposed that the two above mentioned conceptual understandings can actually work synergistically, and that the mechanisms can be combined in a hybrid form, as proposed in the conceptual model presented in Section 8.3.1 (please refer to Figure 8.1 for the next explanation). The researcher has conveyed the idea that the first conceptual understanding has been visualized at the stage of 'risk management' and 'consensus building', which consists of three core elements: policies (i.e. tools of development), institutions (i.e. implementers or actors of development) and the use of science or technology, also supported by the social learning process therein (involving a multi-stakeholder dialogue process and feedback from actual practices) in order to achieve the agreed development goal.

Subsequently, the second understanding in Figure 8.1 is represented in the 'resiliency' stage, wherein the resilience of a community that has been assumed to be formed and invested in the previous development process is then naturally tested by disasters. A disaster can be regarded as an experimental laboratory to pilot the discourse of resilience and sustainable development in the real world. At this stage, it will become clear which aspects of the various development programs need to be improved for them to be sustainable and beneficial to society.

All proposed improvements are then reintegrated into sustainable development, with due regard for the success and failure of the program in every phase of the disaster governance cycle and its relation to the realities of adaptation, coping capacity, and

weakening/strengthening community resilience, as well as ideas to improve innovative risk reduction measures. In short, the two understandings are different, but they are not separate, and can even be aligned in a framework geared towards sustainable development. Moving forward from the model, the researcher attempts to visualize these two understandings in more practical terms within the context of the disaster recovery governance platform (DRGP), as can be seen in Figure 8.2.

Figure 8.2. The Wheel of Disaster Recovery Governance Platform (DRGP)



Source: Analysis (2018)

Recent findings from the Bantul case show that a household's economic segmentation affects its ability to recover quickly from disasters (Nurhadi, 2015). A number of household characteristics can be identified, as follows. The rich have the ability to reduce the impact of disasters. They can, for example, use their assets and resources to repair earthquake-damaged houses. In extreme cases, people with better economic circumstances tend to experience fewer losses, as they can anticipate material losses by building better-structured houses. Meanwhile, the poor have better social networks,

which can help to minimize the cost of housing reconstruction. They use the social capital embodied within the network to work together (i.e. *gotong royong*). In between these two groups, there are a number of households who lack private assets or other privileges, such as social networks. They tend to rely on their own means, but this is insufficient for their recovery.

To address this, empowering MSMEs is essential for processes of disaster recovery, especially in Indonesia, or any other country whose regional economic backbone is small-scale businesses (i.e. MSMEs). However, a number of points need to be noted regarding empowering MSMEs, particularly in terms of their access to capital: 1) capital provision and aid must not cause any kind of dependency; 2) the capital provision should be conducted through the creation of an enabling system to gain access to financial institutions; and 3) the capital-allocation policy should not be misused for the subsistence economy of the recipient. The objectives of facilitating access to capital should encourage MSMEs to act responsibly and become accustomed to cooperating with financial institutions. There are many other aspects that need to be restored in order to revive the local economy. This has been broadly described in chapter 7.

In addition to this, BNPB is developing a disaster resilient village as one of its flagship programs, supported by the Ministry of Disadvantaged Area Development. In 2011 the program was launched and continually refined. Disaster resilient villages are self-sufficient villages designed to adapt and deal with potential disaster threats, and recover quickly from adverse catastrophic impacts. This is expected to be a reference for the future development of resilient villages, especially for livelihood resilience and for taking into account the role and function of the village as an autonomous region, as stipulated in Law No. 6/ 2014 on the Village (Hadi, 2014). Therefore, it will be a strategic effort to integrate community disaster resilience within frameworks of socio-economic development that are regularly implemented by the government. In the post-disaster period, a recovery plan and resilient concepts need to be integrated into the framework of sustainable development through innovative rehabilitation and risk reduction policies (Hermawan, 2014). The efforts undertaken in the recovery phase aim to restore the affected area to a better and safer state than it was before the disaster, so that the livelihood of communities and the strength of the local economy can be restored, and local people can re-engage in the regular development process.

After explaining the conceptual model (i.e. the ‘what’) and the focus of the recovery program (i.e. the ‘how’), the researcher will attempt to scrutinize 'who should be doing

what' throughout the recovery process. This will be discussed in the following part, and then finally the guidelines will be framed in the context of DRGP, as presented in Table 8.2.

8.4.1.1 The roles of the key governmental agencies

In principle, the implementation of post-disaster recovery is the responsibility of local governments, supported by the central government. Governments should pay attention to long-term solutions rather than temporary resolution of problems. To implement this, the government should play a unique leadership role (Subagyo and Irawan, 2008). The main role of government is to provide integrated policies and circumstances that support the acceleration of recovery, and to ensure better resilience to future disasters, including what resources to mobilize, who is doing what, the recovery directions, the timeframe, and the things that society could do to help improve the situation (ibid.).

As the key local actor, the local government should focus not only on providing aid, but also on changing underlying patterns of exclusion and inequality; furthermore, they should take into account cultural awareness (local wisdom) and support as well as engage in multi-skilled recovery networks. In addition to this, local government should support local efforts, as well as ensure access to information for all stakeholders and all types of recovery activities that are required.

In the case of Indonesia, local government roles are handled by BPBD, and regulated in Government Regulation No. 21/2008 on Disaster Management, among others. This seeks to coordinate rehabilitation activities conducted by local government units and related institutions; coordinate the establishment of government-assisted aid mechanisms for community house improvement; coordinate psychological social services implemented by relevant institutions; coordinate efforts to restore public health conditions implemented through the health service centers set by the relevant agencies; and to coordinate with related institutions in the implementation of measures to improve socio-economic conditions post-disaster.

8.4.1.2 The roles of non-government stakeholders

In addition to the role played by both central and regional government, other key players in the recovery process include civil society and business actors (Government of Indonesia, 2007). There are many civil society networks that move with their respective programs and targets. These civil society actors include those who are in

disaster-affected communities, in both urban and rural areas. In the context of Indonesia disaster governance, a network of stakeholders already exist to improve the quality of disaster management at the regional level throughout the country (Mercy Corps Indonesia, 2014). The disaster risk reduction forums themselves, which are initiated by civil society, are now formed from the national level to the village level. At the National Level, there is a National Disaster Risk Reduction (DRR) Platform (called *Planas PRB*), a civil society forum, a forum of businesses, a DRR higher education forum (FPT-PRB), a media forum, and an international agencies forum. In addition to this, there are regional thematic forums, such as Forum Merapi, Forum Citarum, and Forum Semeru.

In disaster recovery, there is a need for greater community involvement and participation, both in terms of the affected communities and the general public. For that purpose, community members should be informed of performance standards they can expect and the extent to which governments and other agencies can help. People must learn how to voice their opinions, especially when it comes to working together and better meeting their needs. In addition, local leaders and committees should know how to communicate and inform people of their needs. In addition, community leaders and committees should learn to better use assistance, to be accountable for financial administration, and to work collaboratively with representatives of aid agencies in relief activities or projects.

Networking is considered important as a system to share information and liaise between CBOs, the different organizations involved, and administrative bodies. NGOs should have good relationships with the community to assess their needs and to find resources to fulfil those needs. The relationship is not always simple, as it involves the creation of regular meetings to address community recovery challenges. However, local NGOs and CBOs should learn about governmental structures and relevant departments and institutions, as well as how to contact and initiate cooperation when needed. NGOs should be able to communicate to donors (and amongst themselves) the value of population-centered aid, to ensure incoming donations will benefit the community. Given the increasing complexity of natural disasters, including complications introduced by climate change, such relationships are valuable, not only for funding, but also in terms of expediting recovery (Schwab, 2014, p. 47).

There are some areas where BPBDs are weak but where the disaster forum is strong because of the presence of national and international institutions. There are also BPBDs

that are inactive because they do not have a good understanding of the issues. Thus, in this case, universities in the region should play the role of a 'think-tank' of BPBD. They should be encouraged to make use of their expertise in the recovery process. The university forum has evolved into the Indonesian Association of Disaster Experts (IABI). In addition to this, there is also the Disaster Education Consortium, which is aimed at developing disaster knowledge through education and research and applying it in the community, as well as supporting the development of sustainable DRR education policies and practices that are both formal and informal and at national and regional levels.

It is imperative that the restoration of local economic conditions involves as many local economic actors as possible. The reason the private sector needs to be involved in recovery is clear: disasters sometimes have an impact – and indeed sometimes paralyze – the production sector. This can take the form of disruption of raw material supply chains, damage to transportation facilities and paralysis of communication that impacts on company operations. Disaster impacts also sometimes cripple microfinance institutions (MFIs) that support small and medium business activities in both rural and urban environments. This paralysis will certainly exacerbate affected communities and disrupt regional and personal economic circumstances.

In terms of the private and business sector, a number of measures can be taken within the disaster recovery context: 1) ensure the standardization of earthquake-resistant buildings; 2) speed up recovery of infrastructure, such as electricity and telecommunications; 3) provide insurance payouts to cover damage to assets and loss of human life; 4) help to accelerate business growth by providing capital loans; 5) use CSR funds to build social and community functions; 6) provide mitigation and business continuity plan training for MSMEs; 7) provide professional input to the government in formulating the recovery strategy of small and medium enterprises affected by disaster; and 8) encourage sustainable economic rehabilitation.

Table 8.2. Guidelines for Stakeholders Derived from the Disaster Recovery Governance Platform (DRGP)

Key Players	Influential Factors	Driving Factors	Determinant Factors	Mainstreaming Elements
Governmental Actors				
Central Government	• Policy and regulatory framework. There needs to be a clear indicator for determining a state of emergency/disaster status, and recovery indicators at each stage • Political dynamic. In order to be sustained, a resilience oriented disaster recovery must be integrated into the development planning process at all levels	• Commitment. There needs to be a sense of ownership of disaster-related programs by all line ministries	• Communication for shared goals. Governments need to engage in dialogue with local communities, civil societies, donors and business communities to agree on a framework for action and priorities • Strategy. There is likely to be a policy for a temporary designation during the recovery period. The government must prepare and provide clear signs so that such policy efforts can be stopped properly without causing excessive dependence or are instead integrated into a more empowering regular mechanism with appropriate planning and budgeting • Institutional network and arrangements. To avoid a slowdown in economic recovery, preparations for the transition of recovery activities from central government assistance activities to full and holistic local government	• Resilience. For resilient recovery, governments must be firm in zoning policies, relocation, and compliance with agreed upon spatial planning of the affected areas

Key Players	Influential Factors	Driving Factors	Determinant Factors	Mainstreaming Elements
			management are required.	
Local Government	• Social and cultural resources. Local government should be sensitive to the cultural, social, political, and geographical area	• Commitment. There needs to be a sense of ownership of disaster-related programs amongst regional/local governmental units • Networking. Local government should have strong networking with national/international NGOs and international agencies, as well as private companies' CSR in the needs of fulfilling quick budget in the early recovery period	• Data and information. Local government should perform public test procedures for verification, including regarding victim data, damage, and loss • Capacity building. It is necessary to enhance the decentralization and independency of local government in managing disaster recovery efforts • Leadership of key organization. In the case of the ad-hoc project, local government as the key organization should be actively engaged and capable of monitoring and controlling the recovery target • Affirmative policy. Local government should observe changing underlying patterns of exclusion and inequality, e.g. disadvantaged groups, gender-based dynamics and conflict situations • Financing. Governments, especially local governments should prepare from their own off-budget (apart from central government) for support for an emergency or early recovery of impacted	• Social learning and participation. Post-disaster technocratic planning should be combined with result from community needs investigation, therefore, the use of participatory analysis, planning and assessment is recommended;

Key Players	Influential Factors	Driving Factors	Determinant Factors	Mainstreaming Elements
			regions • Strategy and procedures. Local government should be aware of the real situation in the field, as it might need to be quickly reviewed and with some flexibility adapt existing procedures for the needs of the local community	
Governmental Leaders	• Political dynamic. There needs to be encouragement of local-level institutional leadership to support recovery	• Network leadership. To generate support from other stakeholders, the key organization can alert the mission or accomplishment gained during the recovery process	• Resources exchange. Local government must be fully aware of its existing resources, or those of other's in the network for the shake of the recovery process	• Social learning and transparency. Governmental leaders should establish a robust complaint-handling mechanism, and at the same time become the feedback for the refinement of the program from implementation onward
Non-Governmental Actors				
Local Opinion Leaders	• Political Dynamic. Local opinion leaders can play their roles to minimize conflicts or act in dispute resolution roles		• Communication. There should be a good communication system among key organizations and endorsed by local opinion leaders to ensure that roles, responsibilities, results and accountabilities are widely understood.	• Participation and empowerment. Local opinion leaders should be capable of multi-way communication to convey the wider people's needs to the authorities • Transparency. The leader can use community media, such as radio and newsletter to inform community members about the existence of the project or the availability of funding

Key Players	Influential Factors	Driving Factors	Determinant Factors	Mainstreaming Elements
Community Members	• Local collaboration history. Pre-existing community groups and activities provide government with an easy means to channel the resources directly to the local level	• Consensus building. By involving the community in planning and implementation, communities will become agents in their own recovery • Well connected community. There needs to be an informal structure of communities that will provide opportunities to their member to be engaged with outsider stakeholders	• Communication. Community members should be well informed about the necessary information regarding the program in which they are expected to be involved	
Business Entities (i.e. MSMEs)		• Incentives and Stimulant. For the MSMEs, the incentive and stimulant provision during the recovery program is essential, especially in the first 6 months post-disasters • Well-connected communities. It would be better for MSMEs to be joined in associations or groups in order to have access to certain resources or information post-disaster		
Private Sector (i.e. Large and Multinational Companies)		• Mutual needs and interest. The private sector may (or more precisely, may tend to) collaborate through CSR in the framework sustainable local economic development according to its relevance to its specialties or product supply chains	• Communication and shared information. Expectations of the private sectors or NGOs partnered with them through CSR funding when they initially want to be involved in the disaster recovery process are: 1) situation report; 2) needs; 3) locations;	

Key Players	Influential Factors	Driving Factors	Determinant Factors	Mainstreaming Elements
		• Networking. The private sector can work together with universities and local/national NGOs in the context of a wide range of implementation and consultative measures	4) who contributes what (i.e. framework of collaborative works); 5) transportation and logistics information update; 6) updated aid-beneficiary mapping	
Local CBOs and NGOs	• Local collaborative works. There need to be regular gatherings to address community recovery challenges (before, during and after) the disaster			• Partnership. CBOs and NGOs should have a good relationship with the community to assess needs and to find the resources to fulfil needs
Scholars and Practitioners		• Networking. Universities and practitioners can work together with key organizations and communities in the context of a wide range of consultative measures	• Resource Exchange. Local universities can cooperate with local key organizations, especially in the provision of evidence-based recommendations and knowledgeable decisions	
Other (Supporting) Actors				
International NGOs (INGOs)	• Social Resources and Collaborative Work International agencies and INGOs should take into account the local conditions. It is not advisable to pledge aid that undermines the inclusion of social values of local communities	• Stimulant and incentive. The mechanism of stimulants / incentives is often implemented to attract the cooperation of various parties, especially the community. However, this effort should not cause excessive public dependence on this kind of program	• Aid disbursement. To maintain motivation and satisfaction level in participatory recovery programs, delay in disbursing funds should be avoided. This also applies to local NGOs and CBOs • Exit Strategies. International NGOs should prepare the process of transferring assets, personnel, equipment and documents before the	• Sustainability. The sustainability of an ad hoc project should have been planned from the beginning, even before the program implementations • Partnership. International NGOs should have good networks with local NGOs and CBOs, especially regarding investing in local wisdom-based activities

Key Players	Influential Factors	Driving Factors	Determinant Factors	Mainstreaming Elements
			end of the grant period and the assistance	
International Agency (e.g. UN Family Organizations, etc.)	• Collaborative works. Persistence and consistent collaboration between the international agencies with the key government organization would make the process of recovery smooth		• Strategies. The proposed strategy should be adapted to be in line with the local government or key organizations' strategy within the impacted country • Capacity building. International agencies are expected to be involved in capacity building and knowledge transfer to the local government.	• Sustainability and partnership. In an ad hoc project, the involvement of local government is essential, starting from the very beginning of project preparation until the formulation of the exit strategy • Transparency and accountability. The international agency as the coordinating agency of donor community aid should establish a transparent system for ensuring that financial and other information is shared widely among stakeholders
Donor Communities	• Policy and regulatory framework. Any initiated assistance from Donor Communities is subject to compliance with the regulatory framework within the jurisdiction of the disaster-affected country		• Leadership. Donor countries and agencies should respect the leadership and any directions issued by the authority of the disaster-affected country and regions	

8.5 Concluding Remarks

Resilient recovery is associated with various political, economic and socio-cultural dimensions. The researcher has systematically underlined those crosscutting issues (see also Chapters 5, 6 and 7), resulting in the argument espousing the importance of social networks and the need for collaborative forms of disaster governance in order to, for example, negotiate various interests and tackle the complexity of disaster recovery processes.

The complexity of disasters calls for collaborative platforms involving the cooperation of various stakeholders so that a resilient recovery and the ultimate vision for a more resilient nation can be achieved. Disaster governance is the responsibility of everyone; disaster should be everybody's business. Thus the participation of all parties is needed, not only government, but all elements within society. The economic and social impact of disaster can be reduced more effectively by integrating not only a disaster risk reduction program (Siagian et al., 2014), but also resilient recovery efforts into the development agenda (Mardiah, Andri N.R. and Lovett, 2015).

Chapter 9. Conclusion

9.1 Introduction

The overarching research question is *'to what extent can disaster recovery be enhanced through collaborative governance and social networks to significantly influence the revival of the local economy?'*. Implicitly, the central thesis underpinning this research is that network-based and collaborative forms of governance within the community, between stakeholders, and at multiphase and multilevel scales serves as the engine of recovery after disasters and helps recovery efforts to run smoothly to meet their goals. By means of mixed-methods, this thesis derived a whole set of findings that support this statement. A recovery process that uses this kind of collaboration should not just be comprehensive and embody shared understanding, but should address gaps in government capacity to be thoroughly capable in implementing its processes. Having considered all of the causes and impacts, it can be inferred that disaster governance is not solely the responsibility of government, but also requires the active involvement of other stakeholders, in particular, communities and other development actors (Maarif, 2010).

At the end of this thesis, there will be a series of concluding statements that offer reflection on the implications for Indonesia's disaster management policies and the implications of research for the body of knowledge in the form of ten propositions for disaster recovery governance. Subsequently, the limitations of the research and future research agendas will also be explained, then finally completed by the closing statement.

9.2 Reflection

In accordance with the Sendai Framework for Disaster Risk Reduction (SFDRR), there needs to be a contribution that links research to the SFDRR's priorities. Amongst other things, this includes research on disaster occurrence (e.g. hazards and climate change), investing in resilience (e.g. structural mitigations, preparedness drills, and early recovery activities) and strengthening disaster governance, i.e. in the emergency response context and in terms of recovery geared towards sustainable development. The researcher has focused on the latter, and the discussion that has ensued will contribute to the development of practical policy that can be implemented in Indonesia and in other parts of the world that share similar socio-political arrangements and

socio-cultural values. It has also strengthened our understanding of disaster recovery governance, especially in the recovery phase, and in particular it has re-conceptualized models, frameworks and propositions that can account for disaster governance. The two following sub-sections discuss these contributions in more detail.

9.2.1 The Implications of the Research for Disaster Governance and Development Policy in Indonesia

Some disasters are said to be the result of natural phenomena. However, many disasters actually occurred or were worsened because of mismanagement and/or the inappropriate implementations of development policy. Even if policy has been on the right track, low levels of participation from relevant stakeholders, especially communities, could lead to only partial or unsuccessful policy implementation. Therefore, this thesis suggests that communities, discussed in the broad sense, should take charge, or at least become actively engaged in their own recovery (see Chapter 6). From this perspective, communities must have (or be facilitated to have) an established mechanism to build understanding, cooperate, communicate and monitor priorities that have been defined by a range of stakeholders, including local (i.e. BAPPEDA and BPBD or Satkorlak/Satlak before 2008) and central government (i.e. BNPB or TTN before 2008), who are identified as the key players in Indonesia's disaster governance efforts (see Chapters 5, 6 and 8). However, on top of that, there need to be harmonious and clear regulations stipulating that the disaster-related agenda is internalized into development policy, and fostering a resilient recovery for the input of development process (see Chapter 5).

The existence of community-based organisations (CBOs) and opinion leaders prior to and during disasters can also play a strategic role. The nature and extent of relationships and networks that exist between communities and these local actors prior to disasters have proven to facilitate communities' needs to be channelled towards broader consensus agreements, policy formulation and the next level of implementation (see Chapter 6). In the context of livelihood and economic recovery, local MSMEs, business associations and local micro finance institutions (MFIs) are crucial and are broadly accepted as the backbone of the Indonesian economy, particularly, in the case of Bantul Regency and Yogyakarta Province (see Chapter 7). NGOs (e.g. IOM, see Chapter 7), international agencies and private sector actors (see Chapters 6 and 7) can also play a role in disaster governance, provided that they are

subject to, and comply with, the law and the development agenda to build a resilient nation.

The cultural values and good relationships that exist amongst stakeholders prior to disasters have always been a valuable resource for (among others but not limited to) building trust, mutual understanding, mutual cooperation, enhancing accountability, resource exchange (including information) between agencies and amongst development actors (see Chapter 6 and 8). This means these cultural values and relationships are a key part of the recovery process, especially during and after the crisis (see Chapter 8). Local and central government are expected to facilitate empowerment through their leadership capability (Chapter 6) and the affirmative policy during economic crisis situations (Chapter 7).

This section elaborates the findings presented in the empirical chapters, such as the perceived needs of MSMEs, and the essential elements and recovery model as well as the factors and platform to collaborate within the disaster recovery process, which enable a resilient recovery to be integrated into the further development process. Resilience is believed to be a key prerequisite for a prosperous nation. Moreover, resilience in the face of disasters should be one of the foundations of a nation, so as to bridge the post-disaster regions to be developed as sustainable prosperous regions. Thus, an agenda for realizing resilient recovery toward development can be drawn from the findings based on the empirical chapters, as follows:

— Encouraging the integration of the efforts of building community resilience to disaster into sustainable socio-economic development agendas (e.g. national and local development plans). This includes activities designed to oversee development policies and implementation - both at the central and local level – so that the development activities will not generate or encourage the occurrence of further catastrophic events;
— Involving all stakeholders relevant to disaster governance, especially those that share similar interests and visions on the development of community resilience. Such involvement should be underpinned by shared values and understanding that is based on regulation, agreement or consensus, and then followed by capacity building for the purpose of the division of roles and duties in building a resilient community;
— Capacity building of local government, especially BAPPEDA, BPBD, Trade and Industry Boards, Small and Medium Enterprises and Cooperative Boards. These local units are related in terms of their proximity (location, duties and

structure) and their strategic role in building community resilience after disasters;

— Analyzing and mapping the socio-economic resilience and vulnerability of communities to disasters. This should include a focus on marginal people and those who do not have access to resources or networks;

— Selecting, setting and designing priority programs and activities that have double effects and leverage for community resilience. Efforts to build community resilience should run accompanied by the development of other disaster management components and by the application of all (or some of) the components of the disaster governance framework proposed in this thesis;

— Establishing a standard of need assessment procedure and reporting on community resilience during disaster governance to facilitate coordination, cooperation, collaboration, monitoring and evaluation.

9.2.2 The Implications of this Research on the Body of Knowledge: Ten Propositions for Disaster Recovery Governance

As has been broadly explained in Chapter 2 (Section 6), research on disaster recovery is limited since only less than 15 percent of papers on disaster study focus on the recovery phase (Elsevier, 2017, p. 17). Most research focuses too much on emergency responses (Kapucu, 2014), or prevention and preparedness (Elsevier, 2017). In terms of the post-disaster situation, and after bridging social network theory into development concepts, there are some propositions advocated by interdisciplinary scholars which at the same time have been revealed as findings from the discussions in the empirical chapters. Summarized from Chapter 8, the propositions are as follows:

First, communities that have better social ties and networks which are well-connected recover relatively quickly and/or more effectively than those which do not (Olshansky, 2005; Kapucu, 2014).

Second, communities that have greater resources or better access to resources - whether through networks or not - suffer less and/or recover relatively faster than those that have no or limited access (Anderson, 1985; Woolcock and Narayan, 2000; Semitiel García, 2006). This is related also to access to information and conveying aspirations.

Third, networks and collaborative work among stakeholders to some extent require pre-conditions (Ansell and Gash, 2008), but play an important role in the recovery

process. Network and collaborative governance are challenging at any scale; however, the failure to define an appropriate scale for collaborative governance may lead to the failure of policy development (Ansell and Torfing, 2015).

Fourth, disaster recovery governance is influenced by pre-disaster conditions and the system contexts. These include (see Chapter 8): (1) policy and regulatory frameworks; (2) global platforms, e.g. the SDGs and the Sendai Framework for DRR; (3) social and cultural resources, e.g. trust, social relations, local wisdoms, etc.; and (4) a history of local collaboration, e.g. through charitable activities, business associations, etc.

Fifth, disaster recovery governance can be initiated and accelerated by the existence of (see Chapter 8): (1) network leadership; (2) consensus building and shared understandings; (3) mutual needs or interests; (4) commitment; and (7) stimulants and incentives.

Sixth, the components of post-disaster management that determine the implementation of disaster recovery governance, are as follows (for complete references, see Chapter 8): (1) shared (and agreed) goals/plans/guidelines with a sense of ownership; (2) institutional networks with legitimate arrangements; (3) leadership and its key organizations; (4) the capacity and capability of key organisations; (5) financing and aid disbursement; (6) affirmative policy and strategy; and (7) communication and exchange resources, knowledge, data, and information.

Seventh, the essential elements of disaster recovery governance consist of the following (for complete references, see Chapter 8): (1) social learning; (2) partnership, participation and empowerment; (3) sustainability and resiliency; and (4) transparency and accountability.

Eighth, social learning should be implemented at least within the process of policy assessment, institutional analysis and the use of technology and science (for complete references, see Sub Chapter 8.3.1.1 in Chapter 8).

Ninth, resilient economic recovery includes a focus on maintaining well-being, restoring livelihoods and redeveloping the local economy (for complete discussion, see Sub Chapter 8.3.1.2 in Chapter 8).

Tenth, resilient recovery is the nexus between disaster and development. The extent to which resilient recovery can be said to be successful depends on how well it fits and how smoothly it is integrated into the sustainable development agenda.

9.3 Limitations and the Potential for Future Research

The limitation of this study is that it only focuses on aspects of livelihood and local economic recovery. In future research, other aspects related to sustainable development should be further explored and scrutinised: (1) not just livelihood and the local economy but also the complete responses of and mechanisms used by stakeholders when collaborating with one another; and (2) how these correlate to the achievement of the SDGs. Nevertheless, the following features contributed from this research can be used to design future studies.

The comparability of network data and/or its results

The network analysis results can be used to compare one case study to another. Moreover, if another researcher is capable of collecting data from a large number of disaster cases across the globe (with a focus, for example on extreme cases or best practices), then that kind of research served as a rigorous test (i.e. can reject or validate) of a network theory or proposition in a disaster context.

Modelling and framework contributions

The variables within the framework developed in this research can be further used in the future to monitor or predict failure in recovery governance programs. It can also be used to identify the most influential variables in other disaster recovery cases by using Analytical Hierarchical Process (AHP) with respondents such as: experts, key stakeholders, and program beneficiaries. Furthermore, if another researcher uses the same few or all variables within the framework consistently, the researcher will be able to rank the likely success of recovery projects (i.e. by ranking their value from highest to lowest) using Data Envelopment Analysis (DEA). Predicting and measuring the success of recovery would be valuable for future research and the effectiveness of disaster policies. However, these are only examples; there are actually many other tools within the proposed framework that can be used for different purposes in disaster studies.

9.4 Closing Remarks

Development of unsustainable practices, ecosystem destruction, extreme poverty and climate change have led to an increase in the intensity of disasters, whether natural or man-made disasters. A number of major cities in Indonesia are located in areas prone

to earthquakes. Meanwhile, rapid urbanization and the development of new illegal residential areas mean more people are at greater risk of disasters. In short, it is undeniable that disaster and development are interconnected.

In late 2014, Sustainable Development Goals (SDGs) were launched by the United Nations to replace Millennium Development Goals (MDGs). This development platform has been adopted by most countries, including the Government of Indonesia (GoI). Achievement of the SDGs will inevitably be affected by the occurrence of catastrophic events and the impact of climate-related disasters. Nowadays, their implementation is more synergetic with the discourse of disaster resilience, risk reduction and impact on life and livelihood, and is mainly supported by the launch of the Sendai Framework for Disaster Risk Reduction (SFDRR) period of 2015-2030. In many ways, Indonesia has placed disaster risk reduction at the forefront of its national development program. However, the persistent targets - initially in the Hyogo Framework and then continued by the Sendai Framework - are still relevant in efforts to build a more resilient nation in the face of disaster.

However, because of the government limitation in disaster management due to the complexity of disasters, multiple stakeholders and multiple resource streams need to be involved. Coordinating synergies within the framework and a shared vision of achieving a resilient recovery are therefore very important. For that reason, the community must have a sense of preparedness and resilience, as well as a willingness to initiate self-recovery, and then are expected to collaborate with government, NGOs, universities, businesses and the international community. Learning from many Indonesian disasters, especially from an insightful study into the 2006 Yogyakarta Earthquake, one can observe the efforts of collaborative work, networks and governance in order to achieve local resilience, not only in terms of the institutional perspectives but also in terms of policy impact and its determination of the implementation throughout the process. Furthermore, along the process –during all the phases, not only in the recovery of the economic sector-, one may also note that much potential is revealed, such as leadership, cultural values, community engagement and so on, which can continue to be maintained as the engine of development growth, especially during and after the crisis.

Many scholars have shown the importance of social capital in disaster recovery studies from around the world (Olshansky, 2005; Aldrich, 2011; Aldrich, 2012a; Olshansky et al., 2012; Aldrich, 2012b), as well as from Indonesia (Kusumasari and Alam, 2012b).

Most of the premises state that cultural values and social capital play an important role in the disaster recovery process. Nevertheless, this study has found slight differences compared to the findings of previous research. Social resources are indeed essential for the recovery process, as they are always part of disaster governance, and are necessary in most recovery cases across the globe that apply a collaborative governance regime.

However, in this case study, it has been carefully considered that social resources should be seen as potentially useful only if they are used effectively in the context of network frameworks and collaborative forms of disaster governance. The researcher has unpacked the detailed story behind the case of Bantul Regency in Chapters 5, 6, and 7, then grouped and systematized these findings into Chapter 8. The evidences therein have shown that the activation and optimization of social resources is closely linked to cultural or naturally established networks, and/or networks of collaborative governance, the aims of which were to achieve shared goals in correlation to SDGs and the disaster risk reduction platform, as well as to build community resilience.

To sum up, because of the complicated nature of problems caused by disasters that lead to complex post-disaster recovery management, it cannot be denied that the recovery effort should be conducted collaboratively with the aim of achieving resilient recovery. Furthermore, based on lessons learned from the disaster recovery cases in Indonesia, it can be concluded that the effectiveness of disaster governance is closely related to the resilience that is embedded in the community and the sustained development process. Lastly, allow me as a researcher to give closing remarks for my thesis:

> *Disaster is a real-life laboratory, where we are able to reexamine the extent to which the hidden values of goodness within us can blossom and become an inheritance for humanity, making it a process that should compel us to examine, assess and evaluate the extent to which development has proceeded within a corridor of natural wisdom and a balance between the two, yet further and most importantly the disaster will be a barometer and a tangible proof that shows us how resilient we are as a nation*

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Appendix

Appendix A. Research Matrix

Overarching Research Question	Sub Questions and Aims	Relevant Chapters	Methods	Instruments	Source of Data
	PhD Components (Non-Empirical Chapters)	Chapter 1 Introduction Chapter 2 Theoretical Framework Chapter 3 Overview of Case Study Chapter 4 Methodology			
'To what extent can disaster recovery be enhanced through collaborative governance and social networks to significantly influence the revival of a local economy?'.	1. *'How is the regulatory and institutional framework in the recovery phase organized so as to revive the local economy?'* Objectives: a. To explore the regulatory framework and post-disaster issues in the general context of disaster; b. To investigate the latest national policy-based networks at the macro level; c. To provide an overview recovery-related policies designed to stimulate the economy, together with their implementation.	Chapter 5 Understanding Disaster Recovery Governance: Indonesian Regulatory Framework and Institutional Network	Qualitative analysis, using: • Regulatory Mapping (RegMAP) • Discourse Network Analysis (DNA) • Qualitative Comparative Analysis (QCA)	Network Analysis through DNA Application	• Government Documents • International Agencies' Reports • NGOs' Reports • Relevant Journals • Interviews
'To what extent can disaster recovery be enhanced through collaborative governance and social networks to significantly influence the revival of a local economy?'.	2. *'What were the multiphase governance and multilevel networks that operated during the economic revival in Bantul after the 2006 Yogyakarta earthquake?'* Objectives: a. To explore the disaster recovery governance during the recovery phase in Bantul aftermath the Yogyakarta earthquake; b. To analyze the existing networks in aggregate level, and to explore insightful mechanism beneath the network based on the case study of Bantul-Yogyakarta; c. To understand recovery and unpack the principles in facilitating the disaster recovery governance	Chapter 6 An Aggregate Approach for Disaster Recovery Governance: A Multiphase and Multilevel Analysis for Bantul Regency – Yogyakarta Province	Quantitative Analysis, using: • Social Network Analysis (SNA) Qualitative Analysis, using: • Content Analysis	UCINET& Netdraw for SNA Manual Thematic Coding	• Interviews • Government Documents • International Agencies' Reports • NGOs' Reports • Relevant Journals

	to revive the local economy.				
'*To what extent can disaster recovery be enhanced through collaborative governance and social networks to significantly influence the revival of a local economy?*'.	3. *"How did the local-community actors in Bantul Regency – Yogyakarta Province, initiate, cooperate and network to revive the local economy, at the level of micro, small and medium enterprises (i.e. MSMEs)?*' Objectives: a. To explore the mechanism of MSMEs to recover and revive the local economy of Bantul after earthquake; b. To investigate the actors' network at the local-community level in Bantul Regency –Yogyakarta Province; c. To identify the lessons and key policies for the revival of the local economy.	Chapter 7 In-Depth Analysis from Individual-Local Perspectives: Risk Perceptions, Implementations and Strategies to Revive the Bantul Regency Economy	Quantitative Analysis, using: • Descriptive Statistical Analysis • Social Network Analysis (SNA) Qualitative Analysis, using: • Content Analysis • Problem Mapping	Microsoft Excel for Statistical Analysis UCINET& Netdraw for SNA Manual Thematic Coding	• Questionnaires • Interviews • Government Documents • International Agencies' Reports • NGOs' Reports • Relevant Journals
'*To what extent can disaster recovery be enhanced through collaborative governance and social networks to significantly influence the revival of a local economy?*'.	4. *'How can collaborative governance and networks in post-disaster recovery contribute to local economic revival and resilient recovery for development?*' Objectives: a. To construct a conceptual model for integrating post-disaster recovery into sustainable development policy from: the understanding of the essential elements and the influencing factors of a resilient recovery (i.e. what works, does not work, and why) based on the case study; b. To develop a framework of collaborative governance in disaster recovery to be integrated into development policy.	Chapter 8 The Nexus of Post-Disaster Recovery and Development: A Synthesis from Disaster Recovery Governance in Bantul Regency	Qualitative Analysis, using: • Content Analysis • Qualitative Comparative Analysis (QCA)	NVIVO for Thematic Coding and Modelling	• Elaboration of empirical Chapters 5, 6 and 7 • Relevant Journals • Relevant Reports
	PhD Components (Non-Empirical Chapters)	Chapter 9 Conclusion			

Appendix B. Theory of Regional Development

Myrdall (1957), has developed a theory of 'Cumulative Causation' to explain regional development. He referred to 'leading-lagging' regions, as well as 'backwash effect' to describe the process by which areas are sucked of growth elsewhere. Leading regions are characterized by a comparative advantage due to their location, infrastructure, and other factors. Then, an agglomeration process occurs, which results in increasing investment. A small amount of investment then spurts from leading regions to lagging regions; however, it is still controlled by the leading regional elites to assure the domination of leading regions. Lagging regions are further inhibited in development process because of backwash effects. Skilled workers, educated professionals, business leaders, and venture capital that may emerge in the lagging regions then will be drawn to the leading region as they seek out higher returns. Goods and services produced in the leading regions are marketed to lagging regions at low prices, such that local industries in lagging regions cannot survive. The effects of investment flows would benefit lagging regions when they are higher than the backwash effect. Myrdall saw no sufficient automatic corrective mechanism for this process within the price system and thought that government is required to overcome backwash effects by, among other, encouraging investment in lagging regions. In other words, affirmative policy is needed. Another theory that is based upon similar ideas was developed by Perroux (1955) and Albert Hirschman (1958), who coined the term 'polarization' to describe unbalanced growth. Polarization involved a process by which development in one area of a country siphoned off resources from other areas, causing some to advance while others either stagnated or lagged behind. However, growth may also lead to a trickledown effect to the hinterland. This may in the form of manufacturing investment, or population settlement. Meanwhile, Neil Smith, with his theory of uneven-development, argued that capital moves to areas that offer the highest profits for investors, resulting in the economic development of these areas. The geographical concentration of production in such locations results in differentiation, as they experience rapid development, while other regions are left behind. As result, there are gaps in living standards and wage rates between regions. Underdevelopment leads to low wages and high unemployment. According to Neil Smith, over time, capital will 'see-saw' from developed to underdeveloped areas, 'jumping' between locations in its effort to maintain profit levels. It is this movement of capital that creates patterns of uneven development, according to Neil Smith, 'capital is like a plague of locust. It settles on one place, devours it. Then move on to plague another place' (p.152).

Source: Summarized from Anderson (1985), Bingham and Mier (1993), and MacKinnon and Cumbers (2011)

Appendix C. Technique of Selecting Case(s)

No.	Method	Definition	Cross-Case Technique	Purpose	Representativeness
1	Typical	Case (one or more) are typical examples of some cross-case relationship	A low-residual case (on-lier)	Hypothesis Testing	By definition, the typical case is representative
2	Diverse	Case (two or more) illuminate the full range of variation on X1, Y, or X1/Y	Diversity maybe calculated by: - Categorical value - Standard deviation if continuous variables - Combination of values (cross tabulation, factor analysis, or discriminant analysis)	Hypothesis Generating or Hypothesis Testing	Diverse case are likely to be representative in the minimal sense of representing the full variation of the population
3	Extreme	Case (one or more) exemplify extreme or unusual values on X1 or Y relative to some univariate distribution	A case lying many standard deviations away from the mean of X1 or Y	Hypothesis Generating	Achievable only in comparison to a larger sample of cases
4	Deviant	Case(one or more) deviate from some cross-case relationship	A high-residual case (outlier)	Hypothesis Generating	After the case study is conducted, it may corroborated by a cross-case test, which includes a general hypothesis based on the case study research. If the case in now on-lier, it may be considered representative of the new relationship
5	Influential	Case(one or more) with influential configuration of the independent variables	Hat matrix or cook's distance	Hypothesis Testing	Not pertinent, given the goal of the influential-case study
6	Crucial	Case (one or more) are most or least-likely to exhibit a given outcome	Qualitative assessment of relative importance (crucialness level).	Hypothesis testing	Assessable by reference to prior expectations about the case and the population
7	Pathway	Cases (one or more) where X1, not X2, is likely to have caused a positive outcome (Y=1)	Cross-tab for categorical variables; and Residual Analysis for continuous variables	Hypothesis testing	May be tested by examining residuals for the chosen cases
8	Most-Similar	Cases (two or more) are similar on specified variables other than X1 and/or Y	Matching	Hypothesis Generating or Hypothesis Testing	May be tested by examining residuals for the chosen cases
9	Most-Differences	Case(two or more) are different on specified variables other than X1 and Y	The inverse of the most-similar method of large N case selection	Hypothesis Generating or Hypothesis Testing	May be tested by examining residuals for the chosen cases

Source: Gerring (2007)

Appendix D. Rationale of the usage of mixed-methods Approach

Despite debates surrounding its philosophical grounding, the practicalities associated with the aims of the mixed-methods becomes main reason why this method is still used by most researchers. According to previous studies, there are few purposes and rationales behind a decision to apply a mixed-methods approach. Greene et al. (1989,p.259) summarized these, drawing upon a number of other key theorists, including: Cambell and Fiske (1959), Webb et al. (1966), Sieber (1973), Denzin (1978), Madey (1982), Cook (1985), Rossman and Wilson (1985), Shotland & mark (1987), Kidder and Fine (1987), as well as, Greene (1987), as follows:

1. *Triangulation.* The design is meant to increase the validity of results by seeking convergence, corroboration, correspondence of results from different methods but for studying the same research object.
2. *Complementarity.* The design is to increase the interpretability and meaningfulness of results by seeking elaboration, enhancement, and clarification of the results from one method with the results from other method.
3. *Development*. The design is to increase the validity of results by using the results from one method to help develop or inform the other method. The point is by focusing on the strength of chosen methods.
4. *Initiation.* The design is to increase the depth of interpretation by discovering paradox, contradiction, and/or new perspectives from the views of different method analysis.
5. *Expansion.* The design is to increase the scope of inquiry by using different methods for different inquiry components.

Appendix E. Stakeholder Analysis

No.	Stakeholders	Needs	Interest	Contribution	Linkages
	Location: Jakarta				
	Central Government				
1.	National Disaster Management Agency *(BNPB)*	Data and information for rapid assessment	To make sure the regions recovered from the impact of disaster	- As a coordinator in managing disaster in national level - As a policy maker in disaster management	- BAPPENAS - BPBD - Head of Regions - Private Sectors (CSR) - International Agency - International/National/Local NGO
2.	The Ministry of National Development Planning *(BAPPENAS)*	Data and information of regions at pre and post-disaster period for the purpose of national development planning	To make sure all regions in Indonesia can develop according to a national development planning targets	- As a coordinator in national development planning process - Provide national data and targets for development programs	- BNPB - BPBD - BAPPEDA - Head of Regency - International Agency - Academics - Practitioners
	International Agency				
3.	United Nations Development Program (i.e. UNDP Indonesia)	Data, information and governmental networking	To offer grants, assistances and loans	- Deliver a temporary/short-term project	- BNPB - BAPPENAS - International NGO - Experts - Academics - Local government
	Private Sectors				
4.	CSR from Private Sectors (e.g. Unilever Indonesia Foundation)	Data and information on local needs (i.e. neighborhood or community level) in relation to company business	To achieve certain level of public recognition to enhance corporate image and marketing purpose	- Deliver donation and partnership scheme programs according to their CSR program	- BNPB - BPBD - Head of Regency - Local Leaders - Local NGO - Practitioners - Academics
	Location: Jogjakarta				
	Local Government				
5.	Regional Disaster Management Unit *(BPBD)*	- Data and information for conducting a local post-disaster assessment - Collective resources for managing disaster	To recover its jurisdiction region from a disaster impact	- As a field coordinator in disaster management in its respective region	- BNPB - Head of Regency - Local leaders - International/National/ Local NGO - Academics - Practitioners
6.	Regional Development Planning Board (*BAPPEDA*)	Data and information of regions at pre and post-disaster period for the purpose of regional development planning	To make sure the region can develop according to a regional and national development planning documents	- As a coordinator in regional development planning process - To integrate disaster program into regional development targets/programs	- BAPPENAS - BPBD - Public works units - The Industry, SMEs and Cooperatives Board - Tourism units - Head of Regency - International Agency
7.	Industry, SMEs and Cooperatives Board	Data and information on damage and loss of status of MSMEs, industries and cooperatives after disaster	To have reliable data regarding a change in the posture of local economy at pre and post-disaster period	- Provide regional data on economic posture	- BAPPEDA - BPBD - Head of Regency - MSMEs - Cooperatives
8.	Public Works Unit	Data and information for Damage and Loss Assessment (DALA)	To have reliable data in order to plan	- Provide regional data on various infrastructure	- BAPPEDA - BPBD - Head of Regency

No.	Stakeholders	Needs	Interest		Contribution		Linkages
		in Public Work's Infrastructures	infrastructure rehabilitation and reconstruction projects, as well as mitigation projects		projects for post-disaster recovery period	-	Head of Villages - Community
	Local Private Sectors						
9.	Credit schemes from, e.g. MFIs, Cooperatives	Potential clients include households, craftsmen and business entities	To have as many credible and bankable clients as possible	-	Deliver loans to community and business entities	-	The Industry, SMEs and Cooperatives Board - Local Business Associations - Business Entities (Micro & Small and Medium Enterprises) and Craftsmen - Households
10.	Local Business Associations (e.g. KADINDA, ASMINDO, *Paguyuban*)	To have an conducive environment conducive to reopening/running a business after disaster	To increase a potential profit of its members during and after disaster recovery period	-	Give policy inputs to local government	-	BAPPEDA - The Industry, SMEs and Cooperatives Board - Bank/MFIs/Cooperatives - Business Entities (MSMEs)
11.	Business Entities (i.e. Craftsmen, MSMEs by Quota Random Sampling)	To have an environment conducive to reopen/run a business after disaster	To increase profit during and after the disaster recovery period	-	Provide services and goods to people	-	BAPPEDA - The Industry, SMEs and Cooperatives Board - Tourism Units - Bank/MFIs/Cooperatives - Households - Big Industries
	Community (Purposive Sampling)						
12.	Local leaders (e.g. former head of regency, local opinion leaders)	To have access to give opinion regarding of the needs of his community	To deliver aspiration of its people	-	Give policy's inputs to local government	-	BPBD - International/National/Local NGO - Private sectors Business Entities (Micro & Small and Medium Enterprises)
13.	International/National/ Local NGO (e.g. Mercy corps, *Dompet Dhuafa*)	To have sufficient donation and support (resources) to deliver to beneficiaries	To have a continuous project (income)	-	Deliver donation or programs from donors	-	BPBD - Local Leaders - Households
	Expert's Opinion (Purposive Sampling)						
14.	Practitioners (e.g. IABI, World Bank)	To have an access to jobs or temporary projects in the disaster context	To have an access to funding from government, private sector or international agencies	-	Give policy inputs to central/local government through projects	-	BAPPENAS - BNPB - BPBD - International Agency - NGO (Local and International) - Private Sectors (CSR)
15.	Academics from Universities (e.g. UGM, Kobe University)	To have an access to data and funding to bridge research and development post-disaster	To have a research opportunity funded by government, private sector and international agencies	-	Give policy inputs to central/local government based on research findings	-	BNPB - BAPPENAS - BPBD - International Agency - Private sectors (CSR) - Practitioners

Source: Preliminary Analysis (2015)

Appendix F. Social Network Analysis (SNA)

Social network methods have developed over the past fifty years and have become an integral part of advances in social theory, empirical research and formal mathematics and statistics. However, the methods are distinct from the methods and applications of traditional statistics and data analysis (Wasserman and Faust, 1994, p. 3). Social network analysis is concerned with understanding the linkages among social entities and the implications of these linkages. Thus, there are several key concepts at the heart of network analysis that are fundamental to discussion of social networks, they are:

Actors. Actors are discrete individuals, corporate, collective social units (whether formal and informal) or formal organizations. Examples of actors are people in a group, department within a corporation, public service agency in a city, nation-states in the world system, etc. Sometimes, network actors encompass mixed types, such as an organizational field comprising suppliers, producers, customers, and governmental regulators of health care.

Relational Ties. Relational ties are the linkages between a pair of actors. The range and type of ties can be quite extensive, for instance: friendship, liking, respect, business transactions, lending or borrowing things, association or affiliation, migration, bridge/road/river, etc.

Dyad. Many kinds of network analysis are concerned with understanding ties among pairs. The ties are inherently a property of the pair and therefore are not thought of as pertaining simply to an individual actor. All of these approaches take the dyad as the unit of analysis. Thus, a dyad consists of a pair of actors and the (possible) ties(s) between them.

Triad. Many important social network methods and models focus on the triad: a subset of three actors and the (possible) tie(s) among them. This triad concept is important in explaining 'Balance Theory'.

Subgroup and Group. Subgroup is any subset of actors, and all ties among them, whilst a group is the collection of all actors of which ties are to be measured. One must be able to argue using theoretical, empirical, or conceptual criteria that actors in the group belong together in a more or less bounded set. Indeed, once one decides to gather data on a group, a more concrete meaning of the term is necessary. A group, then, consists of a finite set of actors who for conceptual, theoretical or empirical reasons are treated as a finite set of individuals on which network measurement are made.

Relation. The collection of ties of a specific kind among members of a group is called a relation. For many groups of actors, we might measure several different relations; besides formal diplomatic ties among nations, we might also record the dollar amount of trade in given year. Relations may be either directed, where one actor initiates and the second actor receives (e.g. advising), or non-directed, where mutuality occurs (e.g. conversing)

Social Network. Having defined actors, groups, and relations we can now give a more explicit definition of social networks. A social network consists of a finite set or sets of actors and the relation (or relations defined on them).

In social network analysis the observed attributes of social actors (such as race or ethnicity, or size or productivity of collective bodies such as corporations or nation-states) are understood in terms of patterns and structures of ties among the units. Relational ties among actors are primary and attributes of actors are secondary (Wasserman and Faust, 1994, p. 8). Fundamental difference between a social network explanation and non-network explanation is the inclusion of concept and information on relationship among units in the study. Theoretical concepts are relational, pertinent data are relational and critical test use distributions of relational properties. Thus, social network analysis is based on assumption of the importance of relationships among interacting units, and the relation defined by linkages among units are a fundamental component of network theories (Wasserman and Faust, 1994, p. 4).

Network models can be used for: 1) formal description (both theoretical and conceptual); and 2) evaluation and testing. In terms of evaluation and testing, network models may be used to test theories about relational processes or structures. Such theories posit specific structural outcomes which may then evaluated against observed network data (Wasserman and Faust, 1994, p. 4). For example, a study of pattern of trade among nations to see whether or not the world economic system exhibits a core-periphery structure. In the network analytical framework, the ties may be any relationship existing between units, for example: kinship, material transaction, flow of resources and support, behaviour interactions, group co-memberships, or the affective evaluation of one person by another.

Source: Summarized from Wasserman and Faust (1994), Scott (2000) and Knoke and Yang (2008)

Appendix G. Aspects and Indicators Disaster Recovery Index

Aspects	Indicators	Measures
Humanity	Health services	Number of health facilities
	Educational services	Number of educational institutions
Housings and settlements	Liveable home in accordance with WHO standards	Floor area per capita
	A clean water facilities	Percentage of households who have access to drinking water and cooking water source
Infrastructure development	Lighting	Electricity usage at home
	Road and bridge infrastructure	Access to health, education, government and economic facilities
Social	Education participation	Net enrolment rate at elementary, junior and senior high school age
	Health participation	Prevalence of particular type of diseases
Economy	Household economic productive	Purchasing Power Parity (PPP)
	Regional economy	Gross Regional Domestic Product (GRDP) per capita
	Employment	Labour Force Participation Rate (LFPR)
		Unemployment Rate
	Poverty	People living below the poverty line
Cross sectors	Governance activities	The completeness and functioning of the government apparatus

Source: BNPB (2015)

Appendix H. Criteria of Beneficiaries of Government Housing Assistance

The Head of Regency Letter No. 413/3772, dated 9 September 2006 regarding the Implementation of Post-Earthquake Rehabilitation and Reconstruction[18] addressed to all Heads of Sub-district and Village Heads in Bantul Regency, emphasized things that need to be agreed together with community groups in prioritizing housing assistance (Bantul Regency, 2008, pp. 124-8):

— Having severely damaged housings according to the valid data of people receiving living allowances (i.e. *jadup*);
— Never received any assistance from any parties in the form of permanent or temporary housing;
— Never reconstructed the house yet and still living in a tent or temporary shelter;
— The owner and not a tenant of the damaged house;
— Having members or head of family who are dead or disabled due to the earthquake;
— Having an elderly person and/or a toddler child/baby within their families;
— Other criteria based on the results of deliberation and local wisdom.

Other additional rules applied (Bantul Regency, 2008, pp. 124-9):

— Data was considered final if the data had been verified by *PokMas* in consultation with facilitator and Management Consultant of Regency (*KMK*);
— Only one heavily damaged house that received one aid package;
— For collapsed/severely damaged houses that were occupied by more than one family, they receive only one aid package;
— For the community living on land owned by others and whose houses have collapsed or are severely damaged may still receive the aid package as long as there was no objection from the landowner;
— For those who have restored houses that had collapsed or were severely damaged using their own money may be given technical assistance within the context of an earthquake resistant construction standard;
— For those whose house is built by other parties in permanent form and has met the earthquake resistant structure standard did not get help anymore.

18 Referring also to the Yogyakarta Provincial Governor Regulation No. 23/2006 on the Operational Guidance for Post-Earthquake Rehabilitation and Reconstruction in Yogyakarta Province in 2006.

Appendix I. Description of Projects on Livelihood and Local Economic Recovery

REKOMPAK (Community-Based Settlement Rehabilitation and Reconstruction) is the abbreviated Indonesian name for the relief project in several locations: the post-earthquake of Yogyakarta and Central Java on May 27, 2006; tsunami in West Java (i.e. *Pangandaran*) on 17 July 2006; and the Merapi eruption in Yogyakarta in 2010. The funding was from a grant from the Java Reconstruction Fund (JRF) under the Grant Agreement between the Government of Indonesia and the JRF, which was signed on February 6, 2007. The implementing agency was Directorate General of *Cipta Karya*, The Ministry of Public Works. The components of REKOMPAK-JRF activities include (Sekretariat JRF, 2011, p. 50):

a. Provision of earthquake resistant house structure, including community settlement plans (CSP)
b. Recovery of community's infrastructure
c. Capacity building of local government and communities
d. Project management

The components of JRF-GIZ activities include (Sekretariat JRF, 2011, p. 54):

a. Technical assistances for MSMEs in terms of access to finance
b. Loan settlement strategy for business with non-performing loans
c. Capacity recovery and opportunity creation to boost the competitiveness of medium-sized enterprises
d. Project management, monitoring and evaluation for the efficiency of the project implementation

Through the mid-term review of the project, the restructuring of financing components from components (b) and (c) to component (1) occurred. This was due to the decreasing demand of components (b) and (c). The redistribution of project component financing was supported by the steering committee in October 2010, enabling this project to support more MSMEs at the grassroots. During this project, from a revolving fund of around US $ 5 million, 10,056 loans had been disbursed to MSMEs through 26 MFIs. In addition, from 582 MSMEs facilitated for the settlement of non-performing loans, as many as 334 MSMEs restructured their debt (based on data from 12 community credit bank/*BPR*).

The components of JRF-IOM activities include (Sekretariat JRF, 2011, p. 58):

a. Assessment and selection of MSMEs' beneficiaries
b. Asset replacement
c. Market access assistance
d. Capacity building and technical assistance

After the previous program of access to financing was cancelled, then the IOM funds were reallocated to the other above mentioned four components. This project also facilitated networking events to beneficiaries through marketing and product innovation workshops, such as workshop activities to increase the market access, exhibitions, and technical assistance in the form of training in business administration and writing business plans.

People's ability to overcome and be resilient to disaster can be supported by the provision of financial funds. The financial access required during crisis situations can greatly reduce the impact of disasters. Therefore, there are a number of component activities of Indonesia Liquidity Facility After Disaster (ILFAD) (Mercy Corps Indonesia, 2014):

The ILFAD Program implemented disaster risk reduction and liquidity management training in working area of the program located in 11 provinces. A total of 230 participants (consisting of 49 women and 181 men) from 164 MFIs attended the ILFAD trainings. Participants were representatives of 89 cooperatives and 75 BPRs located in the area of the program. In addition, the ILFAD program has launched several types of savings through joint cooperation between ACA Insurance, BPR and Cooperatives, namely:

— *Meria Mulia* Cooperative, DI Yogyakarta Province
— *Kopwan Sumber Rejeki* and *SumberJaya*, DKI Jakarta Province
— BPR *Mutiara Pesisir*, Agam Regency - West Sumatra Province
— BPR *Nagari* Development, West Sumatra Province
— *Prajurit* Market Cooperative, Malang City - East Java Province

Source: summarized from Sekretariat JRF (2011); MDF-JRF Secretariat (2012); World Bank (2012); Mercy Corps Indonesia (2014).