Better Preparedness for Better Responses: Integrating Maternal and Reproductive Health into Disaster Risk Management: A Qualitative Case Study from Indonesia

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Better Preparedness for Better Responses: Integrating Maternal and Reproductive Health into Disaster Risk Management: A Qualitative Case Study from Indonesia

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Abstract

This thesis explores the process of integrating maternal and reproductive health (MRH) into disaster risk management (DRM) in Indonesia. This thesis contributes to Indonesia achieving the Sustainable Development Goals, including ensuring universal access to sexual and reproductive healthcare services and the integration of reproductive health into national strategies and programmes.

This single case study of one site in Indonesia provides an understanding of the current integration of MRH into DRM from the perspectives of those affected by and involved in a disaster event. The 2013 eruption of Mount Sinabung in North Sumatera province was selected as the case for this study, as it represented a frequent type of disaster in Indonesia. This case study is underpinned by a diagnostic event approach that examined tensions and dynamic relationships between the past, present and future, and explained the relationships between events, times and processes of integrating MRH into DRM. The objectives of the case study were to: 1) analyse experiences of accessing and providing MRH services during the 2013 eruption, 2) examine perspectives of current DRM practice and 3) explore views for a future DRM model.

Participants were women who were pregnant during the 2013 eruption, community leaders, health personnel in the relocation site of Siosar and policymakers working at district, provincial and central levels. Data were obtained from focus groups and individual interviews, and analysed using thematic analysis. Data were triangulated and the results presented using a socio-ecological approach. This allowed understanding of participants' experiences and perceptions at the *micro-level*, the provision of MRH services at the *meso-level*, the environments surrounding temporary shelters and relocation site at the *exo-level*, and finally overall DRM policies and systems at the *macro-level*.

The findings showed that during the 2013 eruption response, efforts were made to provide MRH services through establishing health teams and clinics in designated temporary shelters. Unfortunately, these temporary shelters were perceived as lacking standards as there were privacy, security, hygiene and sanitation issues that affected the MRH needs of pregnant women and other affected population groups. Furthermore,

the relocation changed lifestyles, traditions and the way people earned their livelihood. Pregnant women and other affected people face ongoing challenges, including access to MRH services.

Overall, this study highlights the ongoing efforts to integrate MRH services into DRM in Indonesia, and reveals some room for improvement. A significant contribution of this study is the implications of the findings for transforming approaches to the integration of MRH into DRM in Indonesia. These findings include policy and programme recommendations pertaining to the need for community education on disasters, improvement of health sector readiness and strengthening of collaboration across sectors. This study demonstrates the importance of using a case study as a methodology and a diagnostic event as an approach to explain relationships between events, times and processes in integrating MRH into DRM.

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List of Abbreviations

AIDS	Acquired Immuno Deficiency Syndrome
APBD	Anggaran Pendapatan Belanja Daerah (regional expenditure budget)
APBN	Anggaran Pendapatan Belanja Nasional (national expenditure budget)
ASEAN	Association of Southeast Asian Nations
AUTEC	Auckland University of Technology Ethics Committee
BKKBN	Badan Kependudukan dan Keluarga Berencana (national board of population and family planning)
BNPB	Badan Nasional Penanggulangan Bencana (national disaster management authority/agency)
BPJS	Badan Pelaksana Jaminan Sosial (social security managing agency)
BPBK	Badan Penanggulangan Bencana Kabupaten (district disaster management office)
BPOM	Badan Pengawasan Obat dan Makanan (food and drug control agency)
CHC	Community health centre/Puskesmas
DRM	Disaster Risk Management
FGD	Focus Group Discussion
HIV	Human Immunodeficiency Virus
II	Individual Interview
IAFM	Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings
IASC	Inter-Agency Standing Committee
IAWG	Inter-Agency Working Group on Reproductive Health in Humanitarian Settings
ICPD	International Conference on Population and Development
IFRC	International Federation of Red Cross and Red Crescent Societies
JKN	Jaminan Kesehatan Nasional (national health insurance scheme)
KIS	Kartu Indonesia Sehat (healthy Indonesia card programme)
KIA	Kesehatan Ibu dan Anak (maternal and child health)
MRH	Maternal and Reproductive Health
MDGs	Millennium Development Goals
MISP	Minimum Initial Service Package
PPAM	Paket Pelayanan Awal Minimum Kesehatan Reproduksi Pada Krisis Kesehatan (Minimum Initial Service Package for Reproductive Health in Crises)
Posyandu	Pos Pelayanan Terpadu Ibu-Anak (integrated maternal-child post at community)
PAR	Pressure And Release Model
Puskesmas	Pusat Kesehatan Masyarakat (community health centres)
RMI	Risk Management Index
STIs	Sexually Transmitted Infections

SEM	Socio-Ecological Model
SIAGA	Suami Siap Antar Jaga (husband readiness to refer and accompany his pregnant wife during delivery)
SDGs	Sustainable Development Goals
UNICEF	United Nations Children's Fund
UNISDR	United Nations International Strategy for Disaster Reduction
UNFPA	United Nations Population Fund
UHC	Universal Health Coverage
UKA	Universitas KabanJahe (University of KabanJahe)
WHO	World Health Organization

Glossary

Case	'A contemporary phenomenon within its real-life context, especially when the boundaries between a phenomenon and context are not clear, and the researcher has little control over the phenomenon and context' (Yin, 2018, p. 15).
Collaboration	The last stage of integration that requires high connection and intensity. (Keast, Brown and Mandell, (2007).
Cooperation	The first stage of integration as the starting point or the base level of a relationship. It has a limited connection and low intensif (Keast, Brown and Mandell, (2007).
Coordination	The second stage of integration that has the notion of 'driving', and involves working towards a common target. It has medium connections and intensif (Keast, Brown and Mandell, (2007).
Development	"A multidimensional undertaking to achieve a higher quality of life for all people. Economic development, social development and environmental protection are interdependent and mutually reinforcing components of sustainable Development" (UnitedNations, 1997, p. 1).
Disaster	'A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts' (UNISDR, 2017, p. 1).
Disaster risk management	'The application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses…Disaster risk management actions can be

	distinguished between prospective disaster risk management, corrective disaster risk management and compensatory disaster risk management, also called residual risk management' (UNISDR, 2017, p. 1).
Humanitarian assistance	'Aid that seeks, to save lives and alleviate suffering of a crisisaffected population' (UNOCHA, 2008, p. 31)
Integration	Integration is defined as an action or process of joining or combining two or more things in an effective was and has three stages: cooperation, coordination and collaboration (Keast, Brown and Mandell, (2007).
Minimum Initial Service Package for Reproductive Health in Crisis Settings	Priority set of life-saving activities to be implemented at the onset of every humanitarian crisis. It forms the starting point for sexual and reproductive health programming and should be sustained and built upon with comprehensive sexual and reproductive health services throughout protracted crises and recovery (UNFPA, 2015a).
Mitigation	'The lessening or minimising of the adverse impacts of a hazardous event' (UNISDR, 2009).
Preparedness	'The knowledge and capacities developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters' (UNISDR, 2009).
Recovery	'The restoring or improving of livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems and activities, of a disaster-affected community or society, aligning with the principles of sustainable development and "build back better", to avoid or reduce future disaster risk' (UNISDR, 2009).
Reproductive health	'A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes. Reproductive health, therefore,

	implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so' (WHO, 1995, p. 19).
Response	'Actions taken directly before, during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected' (UNISDR, 2009).

Attestation of Authorship

‘I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning’.

Student name: Hely Stenly Sajow

Signature: 

Date: 10 February 2020

Dedication

To the two amazing women in my life. I am grateful for everything.

Mother, Ireny, who brought me on this earth, raised me and did everything for me.

Wife, Ernie, who brought our son Matthew on this earth and being the best mum and wife.

To all women in the world!

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Publication and Conferences

Publication

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Conferences

Sajow, H.S., Water, T., Holroyd, E. (2019) *Enabling security and equitable service delivery for pregnant women during a volcanic eruption*. Paper presented at the 23rd IUHPE World Conference on Health Promotion Rotorua (07–11 April 2019), Rotorua, New Zealand

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Disastrous Doctorates. Organised by: Massey University, New Zealand Earthquake Commission, and New Zealand Geological and Nuclear Science (GNS Science), the University of Auckland, Auckland, New Zealand

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Sajow, H.S., Water, T., Holroyd, E. (2017) *Better preparedness for better responses: Integration of MRH into DRM in Indonesia.* A presentation at the AUT's Centre for Child Health Research (CCHR) Auckland University Technology, Auckland, New Zealand

Sajow, H.S., Water, T., Holroyd, E. (2017) *Integration of MRH into DRM in Indonesia.* A presentation at the 2017 Midwifery and Women's Health Symposium. Organised by: Auckland University Technology, Auckland, New Zealand

Ethics Approval

The Auckland University of Technology Ethics Committee (AUTEC) approved this research on 18 July 2017. AUTEC Reference number: 17/231.

In Indonesia, the *Badan Kesatuan Bangsa dan Politik - BaKesBangPol* (the national unity and politics body) of North Sumatera province approved this research on 14 August 2017 (Reference number: 070 – 4124 / BKB-P) and on 8 February 2018 (Reference number: 070 – 312 / BKB-P). In addition, the Health Research Ethics Committee of the Faculty of Nursing University of North Sumatera approved this research on 25 July 2017 (Reference number: 1262/VII/SP/2017).

Chapter One: INTRODUCTION

We cannot stop natural disasters but we can arm ourselves with knowledge; so many lives wouldn't have to be lost if there was enough disaster preparedness.
– Petra Nemcova

1.1. INTRODUCTION

This chapter presents an overview of the research topic, rationale and aim of this study. The use of the post-positivist paradigm and case study approach is justified, and the research design, methodology and procedure are discussed. Finally, the significance of this study is summarised and an outline of the thesis is provided.

1.2. BACKGROUND AND RATIONALE

This retrospective single case study sought to understand the integration of maternal and reproductive health (MRH) services into disaster risk management (DRM) practice in Indonesia. The United Nations reported that the maternal mortality ratio (MMR) in developing countries is 14 times higher than that in developed countries (WHO, 2019b), with disasters being a major contributing factor (Chi, Urdal, et al., 2015). Therefore, integrating MRH into DRM is deemed crucial. Meeting MRH needs during a disaster is fundamental to a person's human rights (Chandra-Mouli et al., 2015; Germain, Sen, Garcia-Moreno, & Shankar, 2015; Starrs et al., 2018). Neglecting these needs can lead to unwanted pregnancy, unsafe abortion, the transmission of sexually transmitted infections (STIs) and human immunodeficiency virus (HIV), as well as maternal and neonatal disability and death (Chan, 2017; UNFPA, 2015b).

Reproductive health spans the life cycle of every human being, from before birth to the last day of life. The International Conference on Population and Development (ICPD) stated that women should have the 'right of access to appropriate healthcare services

that will enable [them] to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant' (CRR, 2013, p. 1). Central to this mandate is the premise that every woman has the autonomy to: make informed decisions about her body; be free from discrimination, violence and coercion; determine the number and spacing of her children; and access reproductive health services without discrimination.

MRH has been increasingly prioritised on the global health agenda. Reducing the health risks and consequences of emergencies is vital to local, national and global health security, and to building the resilience of communities, countries and health systems (WHO, 2019a). Thomalla et al. (2018) argued for the importance of linking development and disasters, stating that 'disaster risks and impacts are closely tied to development processes and initiatives; development can increase or decrease the exposure, vulnerability and resilience of societies, while disasters destroy assets and undo development gains' (p. 1). Sound risk management, including for MRH, is essential to safeguard development and implementation of the Sustainable Development Goals (SDGs). This includes the pathway to universal health coverage (UHC), the Sendai Framework for Disaster Risk Reduction 2015–2030 (Sendai Framework), the International Health Regulations (2005), the Paris Agreement on Climate Change (Paris Agreement) and other related global, regional and national frameworks (WHO, 2019a). It is paramount that humanitarian issues are continuously integrated into development agendas to lessen the impact of crises. For example, the Sendai Framework was developed to guide the planning, implementation, monitoring and evaluation stages of a DRM plan.

Meeting MRH needs during a disaster is paramount. At the global level, the Minimum Initial Service Package (MISP) for reproductive health in crisis situations was developed in 1996 to guide the provision of MRH services during disasters (IAWG, 2018; UNFPA, 2015b; WRC, 2011). The MISP presents a 'priority set of life-saving activities to be implemented at the onset of every humanitarian crisis. It forms the starting point for sexual and reproductive health programming and should be sustained and built upon with comprehensive sexual and reproductive health services throughout protracted crises and recovery' (WRC, 2011, p. 8).

In Indonesia, the status of MRH has been in the spotlight since the country failed to meet Millennium Development Goals (MDGs) targets in 2015. In 2015, the MMR was 126/100,000 live births (Bank, n.d.). This ratio is considered higher than that in other countries in the Asia-Pacific region. Indonesia is currently aiming to meet the SDGs target of reducing the MMR to 70/100,000 live births by 2030 (Adeleke, 2016; Lawn, Blencowe, Kinney, Bianchi, & Graham, 2016).

In Indonesia, MRH falls under the National Health System (Indonesia MoH, 2009), which has the overarching aim of providing a comprehensive healthcare system. MRH includes the provision of services related to family planning, ante- and postnatal care, emergency obstetric care, STIs, and HIV/AIDS and adolescent reproductive health. Cultural and sensitivity issues mean that Indonesia prefers to use the term 'maternal and reproductive health (MRH)' rather than 'sexual and reproductive health' in its policy documents (Indonesia MoH, 2015b). The implementation of MRH interventions is further stipulated in Indonesia's 5-year National Health Strategic Plans (Indonesia MoH, 2015c).

Indonesia is one of the most disaster-prone countries in the world, and has been directing efforts to revitalising its disaster management authorities and facilitating multi-sectoral coordination to achieve better preparedness for better responses. The national disaster management authority (*Badan Nasional Penanggulangan Bencana;* BNPB), provides direction and guidance related to mitigating, preparing for, responding to and recovering from a disaster (BNPB, n.d.-a). At the policy level, a Government Regulation on Disaster Management was endorsed in 2007, followed by Presidential Regulations and Ministerial Regulations. In the health sector, the Ministry of Health adopted the MISP in the National Technical Guidelines for Health Crisis Response on Disaster; this document serves as a 'reference for health personnel in responding to the disaster-caused health in crisis' (Indonesia MoH, 2007, p. 3).

Despite efforts to integrate MRH into DRM in Indonesia, there is a noteworthy gap in available data and literature to support understanding of the: provision of MRH services during disasters; provision of MRH services post-disasters and how they link to Indonesia's DRM model; and the level of integration of MRH into DRM in Indonesia.

Therefore, this thesis aimed to address gaps in current knowledge by examining the process of integrating MRH into DRM in Indonesia.

1.3. KEY TERMINOLOGY

Disaster: 'A serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts' (UNISDR, 2017, p. 1).

Disaster risk management: 'The application of disaster risk reduction policies and strategies to prevent new disaster risk, reduce existing disaster risk and manage residual risk, contributing to the strengthening of resilience and reduction of disaster losses…Disaster risk management actions can be distinguished between prospective disaster risk management, corrective disaster risk management and compensatory disaster risk management, also called residual risk management' (UNISDR, 2017, p. 1).

Reproductive health: 'A state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes. Reproductive health, therefore, implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so' (WHO, 1995, p. 19).

1.4. AIM OF THIS STUDY

The purpose of this study was to understand the integration of MRH services into DRM practice in Indonesia. The primary research question addressed in this study was:

'How does Indonesia integrate MRH into DRM?'

The objectives were to:

1. To examine the experiences of accessing MRH services in a past disaster;
2. To analyse current DRM practice; and
3. To explore views for a future DRM model.

1.5. METHODOLOGY

The philosophical position of this study was based on post-positivism. This paradigm sees the truth from more than one angle, and acknowledges that individuals are limited in fully comprehending the complexity of a phenomenon of concern (Grant & Giddings, 2002; Levers, 2013) because the world is unpredictable (O'Leary, 2005). It is argued that post-positivism 'utilises qualitative information with a belief in the importance of subjective reality but does not abandon tenets of conventional positivism' (Henderson, 2011, p. 342).

Baseline statistics are available for disaster management and health in Indonesia. However, in-depth explanations and records of the perspectives and experiences of those affected by disasters are limited, particularly when it comes to the integration of disaster management and health. Although a well-designed quantitative study with a representative sample can provide essential statistical findings, it may not yield an in-depth understanding of 'how' disasters affect efforts to provide better access to MRH services to help reduce the MMR in Indonesia. Unless a contextualised approach is used in generating knowledge and interpreting information, the resulting understanding of the process of integrating MRH into DRM during times of crisis or disaster in Indonesia is limited. Therefore this research adopted a post-positivist qualitative approach, using a series of logical steps/stages that involved gathering multiple perspectives from participants, rather than relying on singular interpretations of reality (J.W. Creswell, 2013).

This study used a case study design that was primarily guided by the model introduced by Yin (2018). A case study is a method empirical inquiry (Yin, 2014, p. 16). This resonates with Mills, Harrison, Franklin and Birks (2017, p. 9), who stated that 'the goal of a post-positivist researcher is to use science as a way to apprehend the nature of reality while understanding that all measurement is imperfect'. Furthermore, this research used a qualitative approach, as case study research is commonly associated with qualitative enquiry (J.W. Creswell, 2013; Denzin & Lincoln, 2011; Merriam, 2009; Stake, 2006). Among the case study theories, Yin's model was chosen because of its post-positivism stance. Furthermore, processual ethnography (namely a diagnostic event approach) was used to understand the relationships between the past, present and future (Moore, 1987), and clarify the relationships between the event and the process (Scheffer, 2007).

The process used in this study moved from the research question to data collection and analysis, towards an understanding of the phenomenon, and finally generated key recommendations. The decision to use an inductive approach for this research, as recommended by Yin (2018), helped to increase understanding about the 'case' under study, the 'boundaries' and 'the unit of analysis', through the process of condensing raw data into a brief summary. Finally, as part of the study design, an inductive approach facilitated the translation of data into valuable information. This was used to meet the study objectives and answer the research question, and finally move towards developing a conceptual framework for the integration of MRH into DRM in Indonesia.

Various methods were used to ensure the quality of this study, including triangulating the findings (Yin, 2018). Using multiple methods during data collection and analysis was 'mutually informative' (Luck, Jackson, & Usher, 2006, p. 108) and provided 'a more synergistic and comprehensive view of the issue being studied' (Mills et al., 2017, p. 13).

1.6. SIGNIFICANCE OF THIS STUDY

There is a growing body of information on the provision of MRH services in the context of disasters. However, little research has focused on understanding the process of integrating MRH into DRM across disaster-prone countries, including those in the 'Pacific Ring of Fire'. Integration is defined as an action or process of joining or combining two or more things in an effective way. Keast, Brown and Mandell (2007) argued that integration has three stages: cooperation, coordination and collaboration.

To date, no study has been conducted to understand how Indonesia, as a disaster-prone country, has integrated MRH into a DRM model. Currently, there is a considerable gap in research investigating this integration process, which influences the level of readiness to meet MRH needs during a disaster. Consequently, this study stemmed from the need to investigate the current level of integration of MRH into DRM in Indonesia. A particular focus was to understand how better preparedness leads to better responses in meeting the MRH needs of affected populations during disasters.

The unique aspect of this research was the involvement of communities, including women, community leaders, health personnel and policymakers, based on their

experiences of accessing or providing MRH services in the selected disaster and perspectives of future disasters. Therefore, their voices provided reference data on pertinent issues from the perspectives of health users, health providers and policymakers that will affect the process of integrating MHR into DRM.

1.7. STRUCTURE OF THIS THESIS

This thesis comprises 10 chapters. This chapter presented an introduction and overview of the thesis, capturing the aim of and rationale for the study, and briefly describing the theoretical underpinnings.

The second chapter presents the contextual background of the study, including an overview of Indonesia. Given the focus of the research on MRH and DRM, Chapter Two covers information related to the country's profile including population, culture, languages, religions, government structure, socioeconomic status, geographical location and climate. The chapter also explains the types of natural hazards in Indonesia, and describes the current health status (including MRH) and health crisis situation in Indonesia.

The third chapter critically reviews the existing body of literature relating to MRH, DRM and integration processes. The review is presented in three main themes. First, the definition, application and current status of MRH at global, regional and country levels is discussed. Second, the definition, application and current status of DRM at global, regional and country levels is described. Third, the definition and process of integration of MRH into DRM at global, regional and country levels is considered. Furthermore, the chapter introduces the model selected as the conceptual framework to understand the integration of MRH into DRM in Indonesia.

The fourth chapter explains the philosophical underpinnings of the study, and elaborates on post-positivism as the philosophical stance. This is followed by an explanation of the inductive approach, as a feature of qualitative research that was used to establish a theory. Furthermore, Chapter Four explains the case study approach that was used as the main methodology for this study. Finally, the chapter defines and

elaborates on the diagnostic event approach that was used as the method to help to answer the research question.

The fifth chapter elaborates on the case study approach using Yin's model (2018). The five stages of this case study design are explained (design, prepare, collect, analyse and share/report). This chapter also explains the ethical considerations for the study, and provides information related to strategies and approaches used to ensure rigour and establish the believability, value, data stability, generalisation, neutrality and accuracy of the study.

Chapters Six through Eight present the findings of the study across three main themes. '*Looking back: Experiences of accessing MRH services during the 2013 eruption',* which captures the starting point of the 2013 eruption of Mount Sinabung. The second theme, *'Living in the moment: New lives in the relocation place – current DRM practice'*, explains the situation in the relocation site. Finally, '*Looking forward: Perceptions for a future DRM model*', presents expectations concerning future DRM practice that includes better integration of MRH services.

The ninth chapter presents a discussion of the study findings in the context of existing literature. Finally, Chapter Ten describes perceived limitations and strengths encountered while executing this case study. This is followed by key recommendations for policy and practice, and culminates with the researcher's concluding remarks.

Chapter Two: CONTEXTUAL BACKGROUND

2.1. INTRODUCTION

This chapter presents an overview of Indonesia to provide a contextual background for this study. The focus of this research is MRH and DRM; therefore, this chapter provides an overview of Indonesia's profile including the current population, culture, languages, religions, government structure, socioeconomic status, geographical location and climate. This detail is synthesised with a discussion of the types of common natural hazards that contribute to the level of risk In Indonesia, including earthquake, volcanic eruption and extreme weather. The chapter concludes with Indonesia's current health profile, including the MRH situation and health crisis arrangements.

2.2. COUNTRY PROFILE

Indonesia's profile is explained using the pressure and release (PAR) model. This model helps to understand risks in terms of vulnerability analysis in specific hazardous situations (Blaikie, Cannon, Davis, & Wisner, 2014). Use of this model allows factors that influence the country's level of vulnerability (e.g. population, culture, languages, religions, government structure and socioeconomic status) to be used to explain why Indonesia may be more vulnerable to disasters than other countries. In addition, information related to geographical location and climate is discussed, as this helps to determine hazards specific to Indonesia.

2.2.1. Population

Indonesia is the world's fourth most populated country, and the most populous Muslim-majority country. The population of Indonesia is 267 million (as of April 2019), comprising around 50.2% males and 49.8% females (BPS, 2019). The 2017 Indonesia Health Profile estimated there were more than 70 million women of reproductive age in Indonesia (Indonesia MOH, 2018).

Indonesia's population accounts for 3.5% of the total world population (BPS, 2019), and the population density of 144 people per square kilometre (372 people per square mile).

More than 50% of the population is urban (140,824,151 people in 2016). Approximately 80% of the population occupies the Greater Sunda Islands, which comprise Java, Sumatra, Borneo (Kalimantan) and Sulawesi (Celebes). The remaining 20% lives in the western part of Papua and the Lesser Sunda Islands, including Bali, Lombok, Sumbawa, Sumba, Flores and the western part of Timor (Mahendradhata et al., 2017). The uneven distribution of the population across the country means the capacity and resilience to respond to any disasters differs across the islands. Even during normal conditions, public transportation is arguably poor in many parts of eastern Indonesia and on small islands (Soehodho, 2017); this makes the situation even worse when a disaster occurs.

2.2.2. Culture, Language and Religion

Indonesia is a culturally diverse country with many ethnic groups, 724 distinct languages and dialects and six different official religions. This diversity enriches the country's culture. However, the cultural diversity requires extra efforts to unite different populations. Furthermore, diversity influences Indonesia's level of resilience, including awareness and knowledge related to disasters, because of differences in languages/dialects and perceptions of disasters due to cultural practices that are influenced by religions and beliefs.

Indonesia has more than 300 ethnic groups. There are also numerous sub-ethnicities within the major ethnicities. For example, the Batak ethnic group includes Karo, Angkola, Mandailing, Pakpak, Toba and Simalungun sub-ethnicities (CEDMHA, 2015). In the social context, these ethnicities assign various levels of roles and responsibilities to women and men. Women play vital roles both within and outside of their families. For example, in Bali, women traditionally play roles inside the family to support the family's livelihood, such as working outside the house and bringing money into the family. In other ethnicities, women play specific roles outside of the family, such as traditional healers, conducting rituals and acting as *dukun beranak* (traditional midwives) (Muzakkir & Kes, 2018).

People in different ethnicities associate women in different ways. For example, in the Batak Karo ethnic group, a kinship system called *Rakut Sitelu* and *Dayang Beru* (the spirit of rice is female) believes women should be the respected people of the family, as they symbolise food and fertility (Van der Goes, 1997). Among the Sumba of Nusa Tenggara

(another ethnic group), women represent splendour and fertility, and therefore women's voices must be respected in society (Jagalimu & Kasni, 2018).

Indonesia's diversity is reflected in the variety of languages and religions. Bahasa Indonesia, originally from Malay, was officially recognised in 1928 as *Bahasa Persatuan* (the language of unity) to unite people across the country. Bahasa Indonesia is used as the national language in most written communication, education, government and business affairs. However, as a lingua franca country, many areas in Indonesia continue to use local ethnic languages, which remain crucial for communication and business (Foulcher, 2000). The numerous linguistic groups in the Indonesian population speak 724 distinct languages and dialects, with some ethnic, cultural and linguistic groups being related to each other (Mahendradhata et al., 2017). The implications of being a lingua franca country mean Indonesian authorities need to translate material into various dialects to ensure key messages are fully understood. For example, the Ministry of Health of Indonesia translates various messages into different languages and dialects to educate Indonesians on health-related issues (Wilujeng & Handaka, 2017).

Indonesia also acknowledges several religions, including Islam, Protestant Christianity, Catholic Christianity, Hinduism, Buddhism and Confucianism. Approximately 87% of Indonesians identify as Muslim, 7% as Protestant, 3% as Catholic, 2% as Hindu and the remainder as Buddhist or other religions (Mahendradhata et al., 2017). This religious diversity is significant in this context, as a previous qualitative study that considered people's experiences during the Mount Merapi eruption in Indonesia revealed that religions and beliefs influenced how people interpreted disasters (Christia, 2012).

As the biggest island country in the world, Indonesia is ranked sixth within Asia in terms of the cultural diversity and ethnic fractionalisation score (Japutra, Nguyen, & Melewar, (2019). The different ethnicities, languages and religions have also influenced Indonesia's political culture (Arifin, Ananta, Wilujeng Wahyu Utami, Budi Handayani, & Pramono, 2015). Indonesia has 34 provinces. It is officially known as the Republic of Indonesia, and is an independent country with an elected president and legislature system. The capital city is Jakarta, and the governance is divided into central, provincial and district-level authorities.

2.2.3. Governance

Governance in Indonesia has undergone many changes and is shaped by the country's history. Indonesia's current political environment means that different provinces and districts have different capacities to manage their development plans, including responding to disasters. The Constitution that governs Indonesia was created in 1945 and is based on the country's philosophical theory (*Pancasila*), which includes the five principles of monotheism, humanitarianism, national unity, democracy and social justice. The Constitution was amended in 2002 to include reforms from a centralisation to a decentralisation approach. This resulted in the number of territories increasing from 24 to 34 provinces, with 98 municipalities and 416 districts across three different time zones. Decentralisation resulted in each province and district having full authority to manage and develop its territory, including taking responsibility for health, education and infrastructural investment.

The central government provides technical assistance and ensures all interventions at provincial and district levels are consistent with national policies, strategies and plans (Pisani, Olivier Kok, & Nugroho, 2017). However, this governance structure has presented several challenges. Green (2005) argued that the decentralisation process in Indonesia resulted in the introduction of local laws, tax levies and regulations with little or no involvement from the central government. Similarly, Pisani et al. (2017) argued that decentralisation had profound challenges and implications for service provision, health financing and reporting. The central government also faces challenges in combining different systems from different provinces and districts. Furthermore, the newly-created provinces and districts have different levels of capacity and readiness compared with the older provinces and districts. Das and Luthfi (2017) argued that the decentralisation in Indonesia could reasonably be expected to affect disaster management at both the provincial and district levels.

2.2.4. Socioeconomic Status

Although Indonesia's economic status has rapidly increased, poverty rates remain uneven across the provinces and districts. This contributes to the differing levels of resilience during disasters. According to the World Bank (2019), Indonesia's economy has emerged into a strong, lower-middle-income economy. It is the largest economy in Southeast Asia, and has experienced steady economic growth of 5%–6% over the past

decade. This is partly attributable to the Indonesian government's response to the Asian financial crisis in 1999, where it lowered its debt-to-gross domestic product ratio by approximately 75%. Despite this improvement, approximately 31 million Indonesian people still live below the national poverty line (NZD21 a month), and 40% of the population live just above the poverty line. The poverty rates are still considered particularly high in provinces and districts across the eastern part of Indonesia. In addition, rapid industrialisation means the number of urban poor living in cities is increasing. The 2017 Indonesia Health Profile indicated that there were more than 10 million poor people in urban areas (Indonesia MOH, 2018).

Poverty has been linked to a decreased likelihood of getting an education. The United Nations Educational, Scientific and Cultural Organisation (2017) conducted a situational analysis in nine countries across Southeast Asia, and found that out-of-school children remained a major challenge for Indonesia. In 2015, an estimated 4.4 million children aged 7–18 years were not in school. This high out-of-school rate was mainly attributed to their place of residence (with those living in mountainous and rural regions more likely to drop out of school) and poverty (BPS, 2018; UNICEF, 2015). The uneven distribution of economic growth across Indonesia may also contribute to different levels of resilience among citizens.

Socioeconomic status plays an important role in Indonesian communities. Lavigne et al. (2008) investigated people's behaviours in the face of volcanic hazards across four volcanic areas in Indonesia's Java island. That study revealed that at the community level, factors such as socioeconomic status, cultural beliefs and risk perception were constraints for resilience during disasters. Although people were aware they were living in disaster-prone areas, they did not want to leave the area for two main reasons. First, the soil was fertile in volcanic areas, which helped agricultural businesses to flourish, including growing fruits and vegetables and other livelihood activities. Second, there were temples and other historical places in those disaster-prone areas that were known tourist destinations. For these communities, living around the volcanic area meant achieving a good livelihood and better lives; this compromised their risk perceptions (Lavigne et al., 2008) .

2.2.5. Geography and Climate

Indonesia is located between 6° northern latitude to 11° degrees southern latitude and 95° to 141° eastern longitude. It is mainly located in Southeast Asia with some territories in Oceania, and bridges two continents: Asia and Australia. Indonesia is an archipelago with more than 17,000 islands, stretching from Sabang in Sumatera to Merauke in Papua (Indonesia MOH, 2018). The landmass largely consists of coastal lowlands, although many of the larger islands are mountainous, and half of its landmass is forested. Indonesia has the third-largest area of tropical rain forest in the world; approximately 68% of its landmass is covered by forests.

Furthermore, because it is an archipelago, Indonesia is highly vulnerable to the impacts of climate change caused by industrialisation and burning of timber (Mahmud, 2017). Indonesia is also considered one of the world's top greenhouse gas emitters because of its land-use activities and peat fires (Burck, Marten, & Bals, 2016; Mahmud, 2017). The rural environment has been badly damaged by population pressure on existing agricultural land, the demand for more land to grow crops and the market for timber (CEDMHA, 2015).

2.3. INDONESIA'S NATURAL HAZARDS

Indonesia faces many natural threats, including volcanic eruptions, earthquakes, tsunamis, flooding and droughts. BNPB's Indonesia Disaster Risk Index or *Index Rawan Bencana Indonesia* lists 497 disaster-prone districts/cities, of which 323 districts/cities (65%) have been identified as high risk and 174 (35%) as moderate risk districts (BNPB, n.d.-b). According to the 2019 INFORM Report, Indonesia is among 109 at-risk countries. INFORM is a composite indicator developed by the Joint Research Centre that combines 53 indicators in three risk dimensions: hazards (events that could occur) and exposure to them; vulnerability (the susceptibility of communities to those hazards); and the lack of coping capacity (lack of resources that can alleviate the impact). INFORM was developed by the Inter-Agency Standing Committee Reference Group on Risk, Early Warning and Preparedness and the European Commission. The index results are published once each year. Indonesia is currently ranked 55 for overall risk, 17 for hazard

and exposure, 104 for level of vulnerability and 81 for lack of coping capacity (IASC, 2019; OCHA, 2019).

Indonesia is situated on the Pacific Ring of Fire, which is an area surrounding the Pacific Ocean where volcanic activity and recurrent earthquakes occur as a result of the movements of three tectonic plates (Indo Australian, Eurasian and Pacific). Geological, geographical and demographic conditions mean that Indonesia is vulnerable to natural disasters. Table 1 shows statistics for natural disasters in Indonesia from January 1972 to August 2019, taken from BNPB (Indonesian's disaster management authority).

Natural Disasters in Indonesia from January 1972 to August 2019

Type of natural disaster		Frequency
Extreme weather	- Flood (Banjir)	8,173
	- Typhoon (Angin Puting Beliung)	5,547
Earthquake (Gempa bumi)		465
Volcanic eruption (Gunung meletus)		141

Table 1: Natural disasters in Indonesia from January 1972 to August 2019 (source: BNPB http://bnpb.cloud/dibi/tabel1, accessed 03 September 2019)

The following explains the nature of extreme weather, earthquakes and volcanic eruptions that are considered frequent natural disasters in Indonesia (CEDMHA, 2015).

2.3.1. Extreme Weather

Located in the Pacific Ocean typhoon belt, Indonesia is vulnerable to extreme weather events. The impacts of climate change also mean Indonesia is experiencing more intense weather events (Measey, 2010). Rainfall is heavy throughout the year, but the southern coasts and islands tend to be more affected during the monsoon season from May through September. Conversely, the northern coasts and islands receive heavy rainfall during the monsoon season from November through March (Mahendradhata et al., 2017). BNPB statistics from January to August 2019 show that more than 500 small- and large-scale floods occurred in different provinces across the country (BNPB, n.d.-b). An

average of 20–30 typhoons/tropical cyclones hit Indonesia each year, with five to seven of these considered severely destructive (BNPB, n.d.-b; CEDMHA, 2015). These tropical cyclone events also result in secondary phenomena, such as droughts, floods, landslides, heavy monsoon rains and typhoons (CEDMHA, 2015).

2.3.2. Earthquakes

From 1972 to 2019, Indonesia experienced 97 major earthquakes, which caused 181,000 fatalities and cost around NZD18.8 billion in economic loss and damages. This included the devastating 2004 Indian Ocean earthquake that triggered a tsunami. In May 2006, Indonesia was affected by the Yogyakarta earthquake, which caused 5,778 deaths, affected 3.1 million people and resulted in around NZD4.8 billion in economic damages. In July 2006, the Pangandaran earthquake caused 802 deaths, affected 35,500 people and cost around NZD85.1 million in damages. In September 2009, the West Sumatra earthquake caused 1,195 deaths, affected 2.5 million people and cost around NZD3.4 billion in economic damages. The 'triple disaster' of the Mentawai earthquake and tsunami and the Mount Merapi eruption in October 2010 caused 800 deaths, affected 164,000 people and resulted in around NZD37.1 billion in damages (CEDMHA, 2015). In 2018, the earthquake, tsunami and liquefaction in the Central Sulawesi province caused 2,227 deaths and affected 164,626 people (OCHA, 2018).

2.3.3. Volcanic Eruptions

Indonesia has about 500 volcanoes, of which 128 are active and have historical records of eruptions. The most active volcanoes are: Sinabung, Anak Krakatau, Batur, Bromo, Dukono, Egon, Gamalama, Ibu, Kerinci, Kaba, Karangetang, Lokon, Merapi, Papandayan, Rinjani, Rokatenda, Slamet, Semeru, Sangeang Api, Soputan and Talang (CEDMHA, 2015). Figure 1 shows a map of active volcanoes in Indonesia, along with the location of major tectonic plates that result in disaster events such as earthquake, tsunami, eruptions and other hazards.

Figure 1: Regional tectonic setting and presence of active volcanoes in Indonesia (source: Iskandar, Dermawan, Sianipar, & Notosiswoyo, 2018)

Indonesia has a long history of and the highest statistics for volcano eruptions. During the Dutch colonial time before Indonesia's independence, the government were aware of the various hazards that exist in the country. They created the *Volkanologisch Onderzoek* (Volcanology Survey Indonesia) to monitor and report volcanic activity (Iskandar, Dermawan, Sianipar, & Notosiswoyo, 2018). Under the current Government of Indonesia, this is called *Pusat Vulkanologi dan Mitigasi Bencana Geologi* (Centre of Volcanology and Geological Hazard Mitigation). Historical records from the 1800s describe two devastating eruptions that took place in Indonesia. The first was the eruption of Tambora in Sumbawa Island in 1815, which killed more than 80,000 people. The second was the eruption of Mount Krakatau in Java in 1883, which was followed by a severe tsunami; around 30,000–40,000 people were killed. However, these volcanic eruptions resulted in Indonesia's soil becoming fertile and helped agricultural business (Pratomo, 2006). Volcanic eruptions in Indonesia continue, with recent events including the major eruption of Mount Agung on Bali Island in 1963, the series of eruptions of Mount Merapi on Java Island (Pratomo, 2006) and the eruptions of Mount Sinabung on Sumatera Island in 2010 and 2013 (BNPB, n.d.-b).

2.4. HEALTH STATUS

The health status in Indonesia is presented according to the World Health Organization (WHO) Health System Building Blocks (WHO, 2010). This system is used to understand the institutional and resource capacities in the health sector, how health links to DRM and implications for MRH. The Health System Building Blocks consist of: 1) service delivery, 2) health workplace, 3) health information systems, 4) access to essential medicines, 5) finance and 6) leadership/governance. In turn, these blocks link the overall health system with the status of MRH and health crises in Indonesia.

2.4.1. Overall Health System

Service Delivery

The WHO Health System Review reports Indonesia's health system was created in 1626 during the colonial Dutch East India period (Mahendradhata et al., 2017). The provision

of ‘modern’ health services started in 1923 by *Muhammadiyah* (an Islamic group) and *Jang Seng* (a group of Indonesian Chinese). This was followed by the establishment of hospitals by Dutch missionaries in the 1930s, and then by various Catholic orders. After Indonesia gained independence in 1945, the Government of Indonesia took over the provision of health services.

The provision of health services by the Indonesian government includes primary, secondary and tertiary healthcare levels. The primary healthcare level is *Puskesmas* – *Pusat Kesehatan Masyarakat* (community health centres) and was introduced in the early 1970s. This facility was created in every *kecamatan* (sub-district) or area with a population of 30,000–50,000 people. In 1979, the Government of Indonesia introduced *Puskesmas Pembantu* (auxiliary health centres) at the village level (Mahendradhata et al., 2017; Pisani et al., 2017). The secondary healthcare level comprises *Rumah Sakit Umum* (general hospitals), which are usually located in districts and provinces. Finally, the tertiary healthcare level is *Rumah Sakit Rujukan dan Spesialis* (referral and specialist hospitals). These hospitals are located at provincial and central levels.

There are 9,815 *Puskesmas* in Indonesia (around 3.89 per 100,000 population), according to the 2017 National Health Profile (Indonesia MOH, 2018). This includes 3,454 inpatient community health centres and 6,371 non-inpatient community health centres. In addition, 3,437 *Puskesmas* collaborate with health agencies that offer blood transfusion units and hospitals; this supports better provision of MRH services, including referrals for comprehensive emergency obstetric and neonatal care.

The current organisation of the health system in Indonesia is summarised in Figure 2.

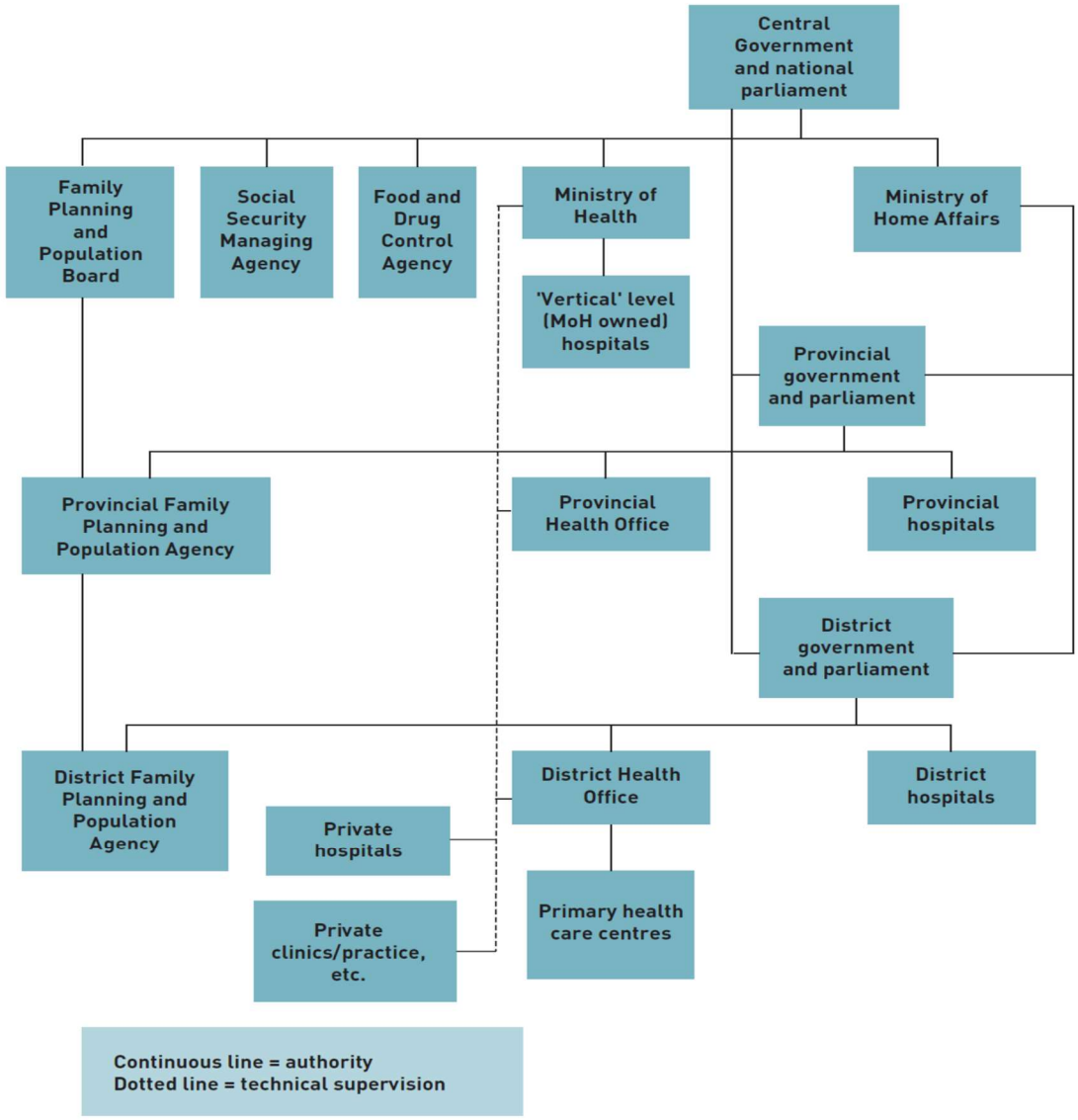

Figure 2: Organisation of the health system in Indonesia (Mahendradhata et al., 2017)

In 1999, the provision of health services was decentralised to provincial and district governments, which are under the Ministry of Home Affairs. The Ministry of Health continues to provide technical supervision to health facilities at the provincial and district levels, and manages national-level health facilities including tertiary and specialised hospitals. The Ministry of Health works together with: the *Badan Kependudukan dan Keluarga Berencana* (National Board of Population and Family Planning) on family planning and contraception issues; *Badan Pelaksana Jaminan Sosial* (Social Security Managing Agency) on the social insurance scheme; and Badan *Pengawasan Obat dan Makanan* (Food and Drug Control Agency) on food and drug monitoring.

The overall indicators of health status in Indonesia have improved significantly over the last two and a half decades. A summary of key health indicators from the 2018 SDGs Health Profile (WHO, 2018a) is provided in Table 2.

Key Indicators		Year
Life expectancy at birth (years)	69	2016
Maternal mortality ratio	126/100,000 live births	2015
Family planning coverage	79%	2012
Births attended by skilled health personnel	89%	2012
Pregnancy care	85%	2012
Number of deaths by disaster	<0.1/100,000	2012–2016

Table 2: Key maternal and reproductive health indicators in Indonesia (WHO, 2018a)

The Government of Indonesia emphasised several strategies to improve the health status in Indonesia in its 2005–2025 Health Development Strategies: 1) health-oriented national development; 2) empowerment of communities and regions; 3) development of health interventions and financing; 4) development and empowerment of human resources for health; and 5) health emergency response (Indonesia MoH, 2009).

The health emergency response was prioritised in the 2005–2025 Health Development Strategies because of the recognition of the country's vulnerability to natural and man-made disasters, including pandemics and communicable diseases. In a recent article, Black et al. (2016) argued that communicable and non-communicable diseases affect maternal, neonatal, newborn, child and reproductive health-related indicators, and should be categorised as non-obstetric factors that are a substantial cause of maternal mortality.

Health Workplaces

Indonesia currently has issues related to the proportion, capacity and capability of health service providers to provide health and MRH services. In addition, despite being

geographically located in a disaster-prone area, it has been identified that health service providers still lack knowledge on disaster management. These issues pose risks to the country when managing disaster responses.

At the *Puskesmas* level, Article 16 Paragraph 3 of the Regulation of the Minister of Health Number 75 of 2014 states that health service providers should include physicians or primary-care physicians, midwives, nurses, dentists, community health personnel, environmental health personnel, medical laboratory experts, nutritional personnel and pharmaceutical personnel. These health service providers should be able to support administration and financial activities, information systems and other operational activities.

The 2017 National Health Profile indicates that challenges faced by the Government of Indonesia include the fact that the proportion of health personnel per population does not meet current WHO standards, with only 70% of village midwives residing close to their duty stations. According to Ministry of Health regulations, at least one in four *Puskesmas* in a given area should be able to provide basic obstetric and neonatal care services, and comprehensive emergency obstetric and neonatal care should be provided in one public hospital at the district level (Indonesia MOH, 2018).

The disproportion of staff as well as the insufficient capacity and capability of health service providers contribute to health workplace challenges, especially as the lack of knowledge on disaster management among frontline health providers compounds the country's vulnerability. Sangkala and Gerdtz (2018) conducted a cross-sectional survey to identify the current levels of knowledge, skills and preparedness for managing natural disasters among community health nurses in Indonesia's South Sulawesi province. They found a low level of perceived disaster preparedness among nurses working in hospital settings.

Health Information System

Indonesia has its own health information system that aims to provide evidence regarding the country's health status through collecting, reporting and evaluating health-related data (Indonesia MoH, 2015b). Despite efforts to improve health data collection, the current health information system is mostly focused on reporting health

activities during the stable condition/normal phase, rather than during disaster response. The 2005–2025 Health Development Strategies highlighted issues related to the availability of adequate and reliable data, as well as the lack of a coordination mechanism that guarantees synergy between the Ministry of Health and other ministries. This is in addition to issues related to multi-level alignments inside the health authorities at central, provincial and district levels.

However, the 2005–2025 Health Development Strategies do not provide specific information related to the health information system during a disaster response. There is no strategy focused on how information collected during disasters is used during the rehabilitation and development phases, and for disaster risk reduction (DRR). This is consistent with a study by Mejri, Menoni, Matias and Aminoltaheri (2017) that explored how disaster-related data informed policymakers during post-disaster recovery. Those authors found that an insufficient strategy for data collection during disaster response leads to fragmented and poor planning. Analysing evidence collected during disaster response supports policymakers to better plan for development and DRR.

Access to Essential Medicines

Access to essential medicines during the stable condition/normal phase has been a key challenge in some parts of Indonesia. The geographical locations, transportation and relatively high cost of buying medicines add to the level of vulnerability. A study by Djafri, Chongsuvivatwong and Geater (2015) revealed that during the 2009 Sumatera earthquake, the provision of MRH services was interrupted by several factors, one of which was the unavailability of basic medicines and supplies. This highlighted that access to essential medicines becomes even more problematic when a disaster occurs.

Geographical locations, along with information, monitoring and reporting systems with poor logistical management influence the accessibility of essential medicines. In past disasters, the medicine stocks were not well-distributed throughout all provinces; data from 2012 showed that three provinces had an availability level below 80%, and six provinces had a drug availability level over 100% (Savin-Baden & Major, 2013). Consequently, the use of an online logistical management system needs to be promoted, including a flexible and accountable relocation scheme for drugs and vaccines between the provinces and districts/cities. A study focused on access to

obstetric emergency care in rural Indonesia by D'ambruoso, Byass and Qomariyah (2010) revealed that lack of drugs and medical supplies, along with affordability issues, contributed to maternal death cases.

Financing

The budget allocation for the health sector is stipulated in the Health Law Number 36 of 2009 of Indonesia (Indonesia MOH, 2018). According to this law, the purpose of health financing is to allocate sufficient amounts of funding that are equitably used to sustain the provision of health services. The budget allocation for the health sector is drawn from both the state budget, called *Anggaran Pendapatan Belanja Nasional* (APBN; national expenditure budget), and *Anggaran Pendapatan Belanja Daerah* (regional expenditure budget) at both provincial and district/city levels. The total APBN allocation should be 5% and that from BNPB should be 10% (excluding salaries for health personnel) (Indonesia MoH, 2009). Although the overall budget allocation to support the provision of health services in Indonesia has shown an upward trend, some areas in Indonesia were not able to meet the 10% allocation requirement. This was because decentralisation has influenced capacity and resource levels. For this reason, not all provinces and districts across the country are allocating 10% to health financing. In some Indonesian provinces, international donors helped with funding to ensure the provision of health, including MRH services. For example, in 2007, a fund from the international community allowed the Government of Indonesia to introduce an initiative called *Generasi Sehat dan Cerdas* (healthy and smart generation) that was meant to reduce poverty and maternal and child mortality at the village level in selected areas (Grayman, 2017). Furthermore, according to the 2015–2019 National Strategic Planning, the overall budget that has been allocated for the health crisis is less than 1% (388 billion out of 449,506.9 billion Indonesian rupiah or NZD4.3 million out of NZD502.4 million) (Indonesia MoH, 2015b).

Finally, the *Jaminan Kesehatan Nasional* (JKN) or national health insurance scheme was introduced to ensure UHC for all Indonesians. This is a subsided health service whereby Indonesians can access care by paying less or by paying nothing at all. On a monthly basis, Indonesians enrolled in this scheme must pay a certain amount of money to keep their insurance valid. According to the 2015–2019 National Strategic Planning, the JKN scheme has increased access to healthcare at the primary level, including referrals to

higher-level health facilities. The coverage of the JKN through its *Kartu Indonesia Sehat* (KIS) or Healthy Indonesia Card programme has continued to increase membership since its launch in 2014. According to the 2017 National Health Profile, a total of 187.9 million (more than 70%) Indonesian individuals were registered in the JKN KIS programme (Mahendradhata et al., 2017; Indonesia MOH, 2018). Unfortunately, there is no specific explanation for the use of the JKN in the event of a disaster. Presidential Decree No. 82/2018 noted that the JKN scheme does not apply in a natural disaster (RRI, 2018). This means that when a disaster occurs, pregnant women would not be guaranteed of free access to safe delivery and other MRH services. This situation increases the vulnerability of pregnant women to maternal morbidity and mortality during a disaster.

Leadership/Governance

The health authority has committed to leading the improvement of the health status in Indonesia by improving its governance through developing policies and systems, and initiating various health programmes, including MRH-related initiatives. However, few policies and systems are in place that would ensure the smooth continuation of services during disasters. This situation poses a risk to the country ensuring business continuity during disruptions, which influences disaster recovery planning for organisational resilience (Geelen-Baass & Johnstone, 2008; Sahebjamnia, Torabi, & Mansouri, 2015; Zhong, Clark, Hou, Zang, & Fitzgerald, 2014). In the context of this study, business continuity is needed for adequate leadership in the health sector to deliver MRH services during a future disaster. The 2005–2025 Health Development Strategies (Indonesia MoH, 2015c) and various policies produced by and posted on the Ministry of Health's official website do not outline any strategy related to continuation of services (including MRH care) during a disaster, or when moving from a disaster to a stable condition/normal phase (Mahendradhata et al., 2017).

2.4.2. MRH

A disaster leads to the interruption of health services and causes a range of physical and psychosocial health effects. Meeting MRH needs during a disaster is part of people's human rights, and neglecting these needs can lead to unwanted pregnancy, unsafe abortion and maternal and neonatal disability and death. Being located in the Pacific Rim of Fire with a high frequency of hazardous events that result in increased morbidity

and mortality means improving Indonesia's health status remains challenging (UNICEF, 2015).

The MRH status of women in Indonesia has been a key priority on the country's agenda. Indonesia's current MMR is 126/100,000 live births (Bank, n.d.), and the country failed to meet the MDGs target in 2015. MRH status is determined by antenatal care coverage, availability of skilled birth attendants to help with deliveries, availability of contraceptives and the provision of family planning services (UN, 2018). Data from the 2012 Demographic Health Survey for Indonesia revealed that 88.6% of births were attended by skilled health personnel, family planning coverage was 79%, pregnancy care coverage was 85% and UHC was 61% (S. Indonesia, 2013; WHO, 2018a).

The Government of Indonesia locates the provision of MRH services under the *Kesehatan Keluarga* (Family Health Unit). According to the 2017 Indonesia Health Profile, there are three main sub-sectors under the family health sector: MRH, child health and nutrition. Furthermore, the MRH sub-sector is divided into: antenatal care; administration of diphtheria tetanus toxoid immunisation for women of childbearing age and pregnant women; delivery care; postpartum care; community health centres implementing antenatal classes and delivery planning and complication prevention programmes (P4K); contraceptive services; and older adult healthcare.

Within the area of MRH development, the 2017 Indonesia Health Profile indicates the government is planning to increase access to and quality of MRH services, with specific targets being: 1) the percentage of *Puskesmas* that organise programmes for pregnant mothers reaches 90%; 2) 100% of *Puskesmas* implement the P4K programme; and 3) 80% of pregnant mothers have a minimum of four antenatal visits. The budget allocated to support the above-mentioned targets from 2015 to 2019 is 2,852.1 billion Indonesian rupiah (equivalent to around NZD307,912,716.00) (Indonesia MoH, 2015b). Given the current decentralisation that involves the transfer of financial and managerial responsibility from the central to lower levels of government, the above-mentioned budget allocation may vary across provinces and districts. This may also affect the level of readiness to provide MRH services during a disaster response.

2.4.3. Health Crisis

Based on learnings from previous disasters, a unit within the Ministry of Health was created to deal with and manage responses during disasters. The Ministry of Health uses the term 'health crisis' in its policy documents to define any impacts related to four common types of potential hazards in Indonesia: natural disasters, environmental disasters, complex emergencies and disease epidemics (Indonesia MoH, 2007, 2015b, n.d.). Within the Ministry of Health, the *Pusat Krisis Bencana* (Crisis Centre) Unit is responsible for decreasing health risks caused by the health crisis (Indonesia MoH, 2015b). The unit has the following objectives.

- To develop guidelines and policies to support health crisis management.
- To improve the alignment through the development of networks for health crisis management.
- To increase the capacity of health resources in qualified and equitable health crisis management.
- To provide information access for the implementation of fast, precise and accurate health crisis response.
- To empower communities in response to the health crisis.

Within the area of health crisis management, the Government of Indonesia's 2015–2019 National Strategic Planning aims to improve interventions for health crisis risks reduction with the following targets. 1) A total of 170 districts/cities out of 514 (33%) receive support to implement health crisis risk reduction intervention in their areas. 2) All 34 provinces (100%) receive advocacy and outreach to support the implementation of health crisis risk reduction interventions in their areas. The budget allocated to support these targets from 2015 to 2019 is 388 billion Indonesian rupiah (equivalent to around NZD41,888,480.00) (Indonesia MoH, 2015b).

The *Pusat Krisis Bencana* unit is responsible for coordinating and developing specific programmes to address health-related issues suffered by infants, children under the age of 5 years, older adults, pregnant women, refugees, disadvantaged families, risk-groups and communities in remote areas, border territories, islands and regions with embedded health issues (Indonesia MoH, 2015b). Although efforts to integrate MRH into DRM have been initiated, including the development of policies and strategies and

adoption of global policies on disaster and health at the country level, Indonesia's MMR has remained high.

2.5. SUMMARY

This chapter introduced the contextual background of Indonesia. The population, culture, language, religions, governance and socioeconomic status in Indonesia were discussed in the context of how each contributes to the level of vulnerability. Furthermore, this chapter explained how the geographical location of Indonesia on the Pacific Ring of Fire results in specific hazards. The chapter also described types of disasters experienced in Indonesia, along with the overall level of risk. Finally, this chapter introduced the country's health profile using the WHO's Health System Building Blocks (WHO, 2010). The MRH status and how the country responds to a health crisis were also outlined.

The next chapter introduces literature related to the integration of MRH into DRM at the global, regional and country levels.

Chapter Three: LITERATURE REVIEW

Ko te whaea te takere o te waka
Mothers are like the hull of a canoe, they are the heart of the family
Ibu bagaikan lambung perahu yang merupakan bagian dasar perahu and memberikan daya apung, Ibu adalah jantung keluarga

Maori proverb

1.1. INTRODUCTION

This literature review provides a critical analysis of previous studies, policies and literature related to MRH, DRM and how they have been integrated. This chapter provides information related to MRH and DRM at global, regional and country levels. The chapter first presents the search strategy used to gather relevant literature, followed key issues related to MRH and DRM identified from a critical analysis of relevant literature. The chapter then outlines the provision of MRH services during various disasters in Indonesia using the chosen theoretical framework. The chapter concludes with identified gaps in existing research.

1.2. LITERATURE SEARCH STRATEGY

A comprehensive search of scholarly peer-reviewed articles was undertaken, mainly through Scopus and Web of Science. These two databases were chosen because they contain peer-reviewed journals in the areas related to the research question (MRH and DRM) and free access for students is provided via the AUT link. The researcher created an account on Web of Science and set up weekly saved searches and alerts, meaning the literature review could be updated as new evidence was published. In addition, a database was created under the 'Save Lists' function in Scopus, whereby folders were created based on the keywords and updated on a fortnightly basis. A variety of other databases were also searched, including: the Cochrane Library, Elsevier/Science Direct

and Sage databases. Specific journal databases were also searched, including the Asia Pacific Journal of Public Health, Global Public Health, International Journal of Disaster Risk Reduction, Health Policy and Planning – Oxford Journal, Journal of Development Study and Sustainability Science, the Lancet, Sexual and Reproductive Health Matters (formerly Reproductive Health Matters) and Social Science and Medicine. Grey literature was also examined by assessing the websites of various organisations. This search was conducted at global and regional levels, and covered various websites such as the Association of Southeast Asian Nations (ASEAN), Inter-Agency Working Group (IAWG) on Reproductive Health in Crises, the Red Cross and different agencies within the United Nations. At the country level, various websites were searched, such as *the* BNPB (national disaster management authority), *Badan Pusat Statistik* (central agency on statistics) and the Ministry of Health of Indonesia. The websites of various global health and disaster management bodies and institutions were also accessed. Lastly, news media including BBC, CNN, Channel News Asia, the Jakarta Post, the Guardian and relevant blogs were examined.

The literature searches used keywords and terms based on the research question (see Figure 1). Truncations and Boolean operators were used to find alternative endings to key words and allow for variability of terms adopted in the literature. The keywords and terms used are presented in Figure 3.

Indonesia	**Integrate**	**Maternal and reproductive health**	**Disaster risk management**
"Pacific Ring of Fire"	Integrat* (integration, integrate, integrating)	"Maternal health"	Disaster* (disaster, disasters)
"Pacific Rim of Fire"	Cooperation	"Reproductive health"	"Disaster risk"
"Disaster-prone countr*" (country, countries)	Coordination	Health	Humanitarian
"Developing countr*" (country, countries)	Cooperation	"Sexual and reproductive health"	Emergenc* (emergency, emergencies)
"Middle-income countr*" (country, countries)	Mainstream	"Maternal and child health"	Crisis
			Crises
			Eruption
			Volcanic

Figure 3: Keywords and terms used in the literature search for this case study

Articles were considered and examined if they were written in English or Bahasa Indonesia. Articles were eligible for inclusion if the publication date was from January 1996 to present. The 1996 was selected as the start point of the search as it marks the time when the IAWG for Reproductive Health Crisis developed the MISP for reproductive health in crisis settings. The literature review process was conducted throughout the execution of the case study. To answer the research question, related information from secondary sources was also gathered and analysed. Relevant studies and policy documents were reviewed and stored in an excel spreadsheet and Endnote software. Terminology related to the research question was identified, reviewed and used to guide the literature review process. Terminology related to MRH and DRM were gathered in a glossary of terms.

In total, 422 articles were retrieved. Of these, 151 articles were excluded as they focused on other issues such as teeth eruption, transportation during disasters, nuclear disasters and communicable diseases during a disaster. The selected 271 articles comprised 50 papers from the grey literature, 93 studies that drew on qualitative methodologies, 45 quantitative studies and 83 mixed-methods studies. Fifty-five articles related to Indonesia and the remaining 216 articles concerned the global and regional (Asia Pacific and ASEAN) levels.

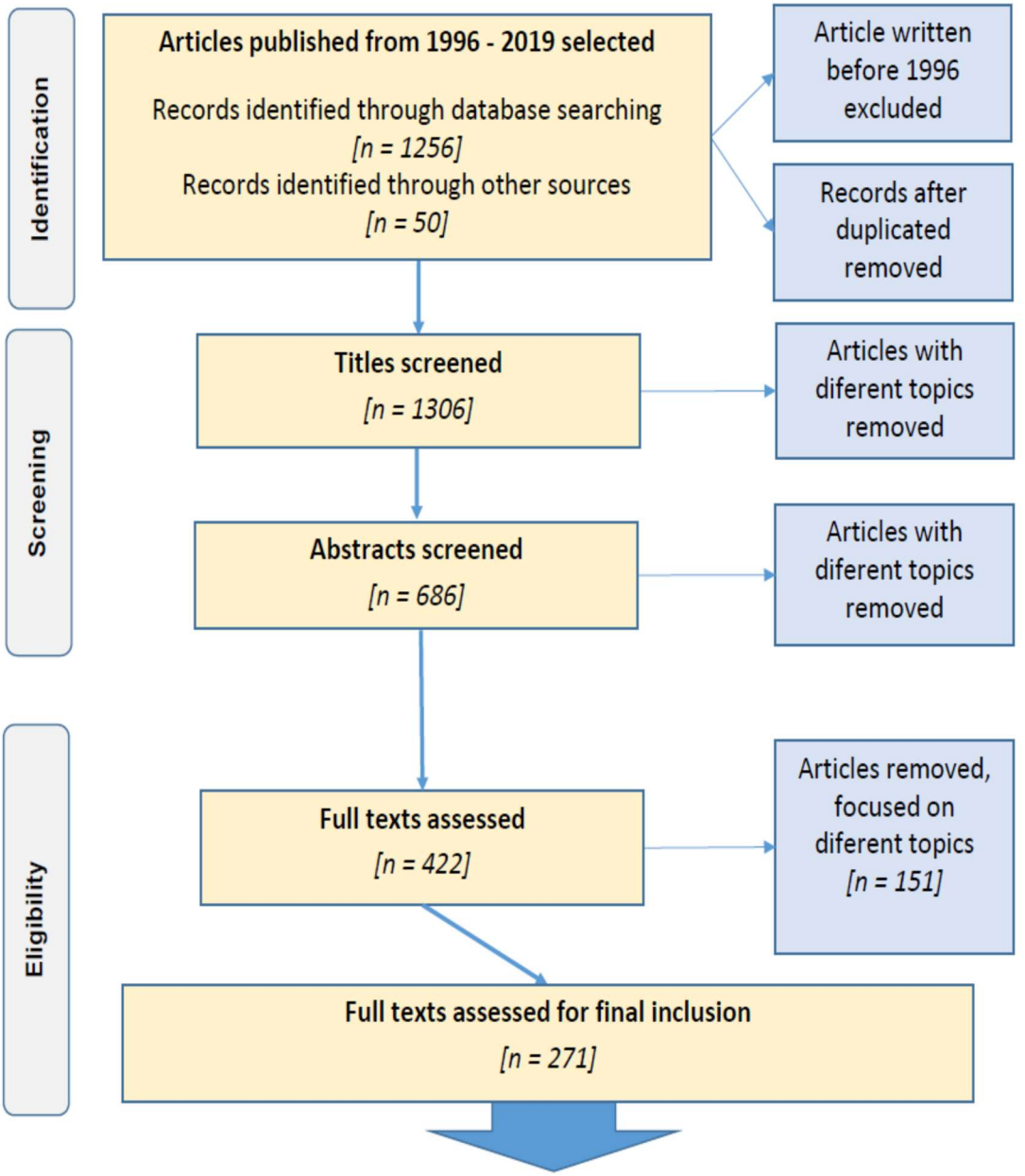

Figure 4: Critical review flowchart, adopted from Payne et al. (2015, p.3)

After the selected articles were reviewed, the findings were grouped into three main categories:

1. MRH (n=109)
2. DRM (n=89)
3. Integration of MRH into DRM (n=73).

The section discussing first group related to MRH starts with key definitions and the application of terminology (e.g. ‘maternal health’, ‘reproductive health’, ‘sexual and reproductive health’, and ‘maternal and reproductive health’) that is used interchangeably at the global, regional and country levels. The literature review showed that these terms were used to suit the context depending on cultural and sensitivity issues. Furthermore, this category linked MRH concerns during disasters with the global agenda for improving maternal health and ensuring universal access to sexual and reproductive health. The literature highlighted: the need to address MRH requirements in both normal and disaster settings; the impact of disasters on MRH needs; and global packages that have been designed to meet MRH needs during a disaster and how they have been applied in several countries. This section also explains the importance of planning for comprehensive MRH services after a disaster and the relevance of integrating MRH services into DRM. Finally, an overview of the status of MRH in Indonesia is presented.

The second group related to DRM provides an understanding of key concepts related to disaster and risk. The literature highlighted the role of DRM in bridging humanitarian and development agendas with reference to the disaster cycle. This section also outlines ongoing global efforts in drafting DRM policies and strategies, current understanding of DRM concepts and integrating MRH issues in both humanitarian and development agendas as a current priority. Finally, DRM is examined in relation to Indonesia.

The third group focuses on literature related to the integration of MRH into DRM. This section starts by defining the concept of integration, followed by a discussion of the importance of this integration. The section finally summarises the metamorphosis of integration of MRH into DRM at global, regional and country levels.

1.3. MRH, DRM AND INTEGRATION

1.3.1. MRH

Defining MRH

Reproductive health crosses the life cycle of every human being. It begins before birth and continues until the last day of life. The ICPD stated that women should have the 'right of access to appropriate healthcare services that will enable [them] to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant' (CRR, 2013, p. 1). Central to this mandate is that every woman has the autonomy to: make informed decisions about her body; be free from discrimination, violence and coercion; determine the number and spacing of her children; and have access to reproductive health services without discrimination. This is recognised as an important public health issue and a fundamental human right (Chan, 2017; WHO, 2012b).

Many organisations use MRH-related terminology to focus on issues related to meeting reproductive health needs among pregnant women and lactating mothers. Other agencies such as the WHO use MRH terminology to explain maternal mortality, antenatal care and family planning (WHO, n.d.). Conversely, some non-governmental organisations (e.g. Save the Children) use the same terminology to focus discussion around healthy pregnancies and healthy families (Children, 2013, n.d.). Researchers also use this terminology when conducting studies related to maternal health and reproductive health. For example, Chi, Bulage, Urdal and Sundby (2015a) used 'maternal and reproductive health' while conducting qualitative research to understand perceptions of the effects of armed conflict on maternal mortality and morbidity cases in Uganda and Burundi. In contrast, Dynes et al. (2018) used the same terminology in research that aimed to understand the integration of family planning services into non-family planning care visits in Tanzania. Furthermore, although debatable because of cultural and sensitivity issues, countries such as Indonesia prefer to use MRH rather than sexual and reproductive health in their policy documents (Indonesia MoH, 2015b). For example, the Ministry of Health of Indonesia's Regulation Number 61/2014 on Reproductive Health uses MRH terminology to cover maternal health and reproductive health issues, including sexual violence (Indonesia MOH, 2015a, 2015b). MRH is a global issue, as 'every day [in 2015], about 830 women die due to complications of pregnancy

and childbirth around the world, in both stable and crisis settings. Further, almost all of these deaths occurred in low-resource settings, and most could have been prevented' (WHO, n.d.).

Aligning MRH During Disasters with the Global Agenda

Addressing MRH needs in both normal and disaster settings is critical. Because birth is unpredictable and cannot be controlled, pregnant women continue to demand MRH services in both stable and unstable situations. Unfortunately, disasters result in disrupted access, insufficient human resources, destroyed health facilities and even unavailability of supplies and services, all of which place women and neonates at greater risk for adverse outcomes. Sohrabizadeh, Jahangiri and Jazani (2018) argued that disasters can increase vulnerability to poor MRH outcomes. Those authors stated that even during stable conditions, pregnant women are already vulnerable because of physical changes (e.g. an expanding belly and weight gain, enlarged uterus, morning sickness and backaches), which can also affect their emotional and mental health. During a conflict or natural disaster, pregnant women may be even more vulnerable because of additional risk factors such as exposure to violence, sudden loss of medical and non-medical support, malnutrition and trauma. These factors contribute to increased maternal and neonatal morbidity and mortality.

Several studies have argued that men and women are not equally affected by natural disasters for this reason (Sohrabizadeh, Tourani, & Khankeh, 2016). Disasters are considered to put pregnant women at risk for increased adverse health outcomes, including unsafe abortions, complications, disabilities and death (Chan, 2017; UNFPA, 2012c). Similarly, another systematic analysis by Kassebaum et al. (2016) reviewed the global burden of maternal mortality at the global, regional and national level from 1990 to 2015. They found that natural disasters, man-made disasters and epidemics that impair the health system slow the improvement of women's MRH status. A disaster interrupts health services and causes a range of physical and psychosocial health effects, including maternal mortality and morbidity cases. In Iran, Motamedi, Saghafinia, Bafarani and Panahi (2009) highlighted the impact of the 2003 Bam earthquake, which included unwanted pregnancy, unsafe abortion and trauma. Their retrospective study aimed to reassess the emergency response and recovery process after the earthquake. They found MRH services were inadequate, including a lack of hygiene supplies for

affected women of reproductive age. Similar findings from a mixed-methods study conducted by Wayte et al. (2008) in Timor-Leste also highlighted the importance of life-saving MRH interventions, such as strengthening coordination among providers and boosting awareness of the importance of family planning, management of sexual violence, prevention of STIs and HIV and emergency obstetric care during a disaster.

The MISP for reproductive health in crisis situations was developed in 1996 as a global guideline that recognised the impact disasters have on neonatal and maternal health. The MISP aims to guide the provision of MRH services during a disaster (WRC, 2011) and is defined as follows.

> Priority set of life-saving activities to be implemented at the onset of every humanitarian crisis. It forms the starting point for sexual and reproductive health programming and should be sustained and built upon with comprehensive sexual and reproductive health services throughout protracted crises and recovery (UNFPA, 2015a).

The package aims to coordinate a set of priority activities for use in disaster areas (WRC, 2011). The global MISP is captured in the Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings (IAWG, 2018), which is a global guideline for better implementation of reproductive health services during disasters. The MISP was created in accordance with the Sphere Minimum Standards in Disaster Response, and has been integrated into the Inter-Agency Standing Committee Health Cluster tools and guidance (Sphere, 2018; WHO, 2018b; WRC, 2011). The MISP, the Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings and the Sphere Minimum Standards in Disaster Response guide the provision of MRH services during disasters, because meeting these needs would mean saving the lives of affected people.

Meeting MRH needs during a disaster remains a considerable challenge for low- and middle-income countries, especially as different countries have different capacities to respond to disasters and meet the MRH needs of affected populations. Kabakian-Khasholian, Shayboub and El-kak (2013) conducted a retrospective qualitative evaluation case study on the provision of reproductive health during the 2006 war in Lebanon. That study highlighted the needs of maternal health services during the disaster as well as access to psychosocial and mental health support. They argued that during the 2006 war in Lebanon, MRH-related services were disrupted but the need for

these services was increased. War-affected pregnant women were traumatised and required psychosocial and mental health support in addition to basic antenatal and postpartum services. Accessibility and availability of MRH-related services were the main challenges faced by those pregnant women. Those researchers reported that the number of MRH-related complications during the 2006 war increased because of the limited number of health facilities that still functioned during the war. They noted that the increased complications were only detected from the statistics of those who came to health facilities; there were many unreported cases because of accessibility issues.

Similarly, Chynoweth (2008) conducted a case study that explored the priority of reproductive health needs and service gaps encountered by Iraqi refugees in Jordan, and demonstrated the lack of 24/7 reproductive health services in refugee shelters. Participants in that study highlighted challenges related to lack of access to information and services related to safe motherhood and family planning, including safe delivery for pregnancies with complications. That study revealed that because of unfamiliarity with MRH services, affected women had to access private clinics for delivery care, which added to the burden because they had to pay to access these services. In addition, that study found insufficient knowledge and skills related to the implementation of MISP among health personnel on the ground. Therefore, there was no provision of basic life-saving MRH services, including emergency contraception and measures related to the prevention of HIV/AIDS (including condoms). Finally, that study reported that coordination among stakeholders was also insufficient, which resulted in poor planning, implementation and monitoring of the provision of MRH services. The affected women and men participants felt that the design of MRH interventions was not consistent with their local culture. Therefore, those authors strongly recommended better coordination to deliver appropriate and culturally sensitive reproductive services, including information related to referral and awareness.

Planning for comprehensive MRH services after a disaster is important because the effects of a disaster do not stop after an event finishes. Post-event effects influence MRH status. Brunson (2017) investigated the long-term gendered impacts of the 2015 Nepal earthquakes, and argued that the long-term impacts of disasters on maternal health were poorly understood as the majority of MRH studies were related to the response phase following a disaster. Brunson's study revealed that disasters have long-term

impacts on maternal health, including trauma and other mental health problems that affect mothers, their babies and other children. That study also revealed that pregnant women who experienced the disaster faced challenges beyond health issues, such as social and economic problems. Therefore, the author suggested planning for comprehensive MRH services after a disaster. Consistent with this recommendation, the Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings (IAWG, 2018) emphasised planning for the provision of comprehensive reproductive healthcare services after a disaster. The provision of post-event comprehensive reproductive healthcare services should be designed according to the Six Building Blocks of Health Systems (WHO, 2010). The Six Building Blocks of Health Systems contribute to strengthening health systems as they cover service delivery, health workplaces including health service providers, health information systems, access to medicines and supplies, health financing and governance/leadership. As the situation permits, authorities should plan for comprehensive MRH according to the Six Building Blocks of Health Systems to ensure better integration and sustainability of interventions. According to the Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings, planning for comprehensive MRH services by integrating these interventions into primary health cases immediately after a disaster would improve the quality of services and reduce the vulnerability of affected people (IAWG, 2018).

Connecting efforts to provide MRH services in a humanitarian setting with other sectors saves the lives of affected people and improves MRH outcomes; therefore, integrating MRH services into DRM is imperative. A qualitative case study conducted by Chi, Bulage, Urdal and Sundby (2015b) that explored conflict and post-conflict behaviour in Burundi and Northern Uganda highlighted the need for inter-sectoral coordination to continue provision of comprehensive MRH services to affected populations. That study suggested an approach that required the collaboration of multiple sectors, including the restoration of livelihoods, education and other basic services. Similarly, the Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings recommends multi-sectoral coordination to provide comprehensive high-quality sexual and reproductive health services during disaster and post-disaster settings (IAWG, 2018). This was because other health sectors as well as sectors such as education, nutrition, protection,

transport, water and sanitation have a part to play in planning and delivering MRH services. These arguments reflect the importance of integrating MRH into DRM.

Understanding the MRH Status in Indonesia

Indonesia's MRH status has been in the spotlight since the country failed to meet the MDGs targets in 2015. Like many other developing countries, factors such as starting conditions that reflected the initial situation when the MDGs were first initiated in 2000, weak governance, conflict and environmental degradation challenged efforts to meet these targets (Munoz, 2008). In Indonesia, the large-scale forest fires to obtain wood as a source of energy for cooking and land for livelihood (largely due to poverty issues) contributed to deforestation that caused natural disasters. These disasters delayed and affected access to and provision of MRH services (Fullerton & Anderson, 2016; Munoz, 2008). A national study conducted by the United Nations Population Fund (UNFPA), BNPB and Statistics Indonesia revealed that as the country is located in the Pacific Ring of Fire, more than 9% of its population lives within areas at very high risk for natural disasters (UNFPA, 2012b). Furthermore, a quantitative systematic review of peer-reviewed and grey literature (published 1995–2014) that aimed to understand the fourth MDG and child health inequities in Indonesia by Schroders, Wall, Kusnanto and Ng (2015) highlighted several barriers to improving the MRH status in Indonesia. These barriers included geographical conditions and lack of infrastructure in rural areas, insufficient maternal education, poverty and low income (all of which caused psychosocial stress), along with inadequate nutrition, financial difficulties in accessing quality care at modern health services and reliance on traditional healers and birth attendants. These barriers affected both child and maternal health. The initial global target was to reduce the MMR by three-quarters and achieve universal access to reproductive health by 2015. However, the evidence revealed that several disasters had contributed to the failure to meet the target. Indonesia was only able to reach a MMR of 126/100,000 live births compared with the target of 102/100,000 live births by 2015 (WHO, 2016).

Indonesia has one of the highest MMRs compared with other countries across the Asia Pacific region (Ahmed & Fullerton, 2019). As a middle-income country, this statistic is alarming (Bank, 2015). The following figure shows the ratio among ASEAN and neighbouring countries across the Pacific.

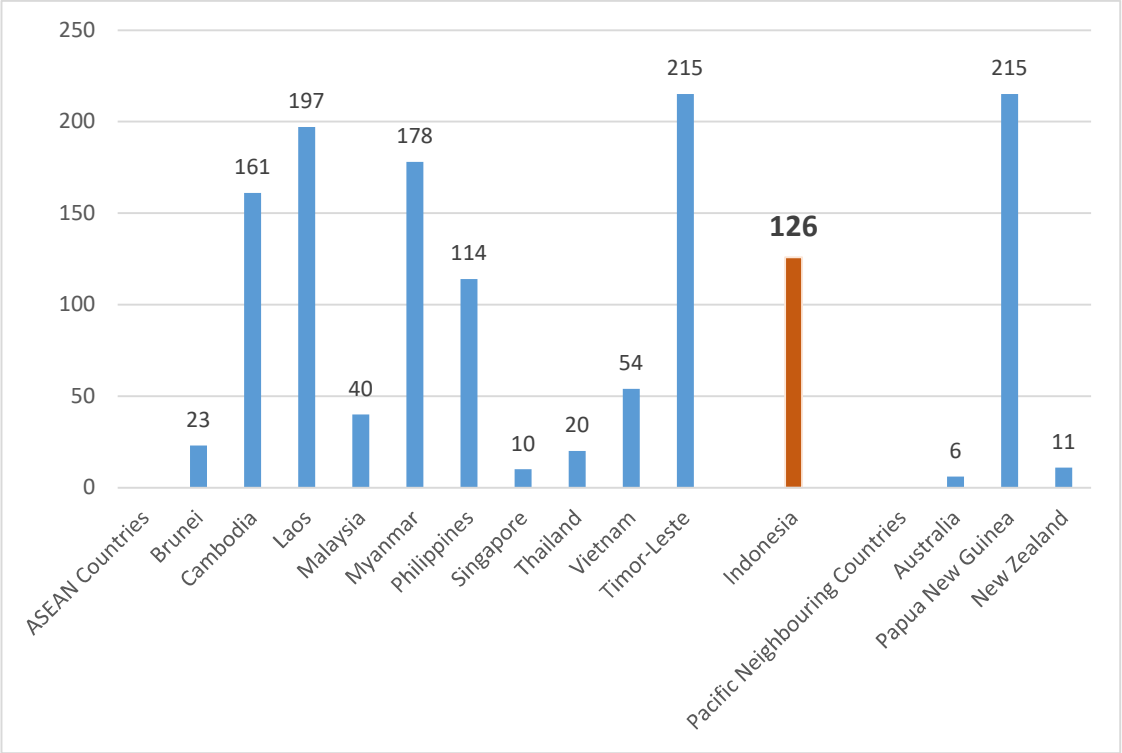

Figure 5: Maternal mortality ratio in 2015 (source: World Bank Online Database: Modelled estimate, per 100,000 live births)

Efforts to improve the MRH status in Indonesia were demonstrated in a qualitative study conducted by Shiffman (2007). That study found maternal and child health was part of basic health services in Indonesia. The commitment of the Government of Indonesia to meeting MRH needs was seen in the incorporation of the issue into national policies and plans. Currently, Indonesia aims to meet the SDGs target of reducing the MMR to 70/100,000 live births by 2030 (Adeleke, 2016). However, according to Galati (2015), the 17 SDGs and 169 targets seem too ambitious. Therefore, many countries (including Indonesia) are likely not to achieve them. The SDGs specify several relevant targets for MRH, including ensuring universal access to sexual and reproductive health services (e.g. information and education, family planning, integration of reproductive health into national strategies and programmes) as well as strengthening national capacity for DRM.

1.3.2. DRM

Defining the Meaning of DRM

A disaster refers to a disruption of function due to events. The United Nations Office for DRR defined a disaster as a 'serious disruption of the functioning of a community or a society at any scale due to hazardous events interacting with conditions of exposure, vulnerability and capacity, leading to one or more of the following: human, material, economic and environmental losses and impacts' (UNISDR, 2017, p. 1). The effect of a disaster varies depending on the level of exposure, vulnerability and hazards. The relationships among exposure, vulnerability and hazards is described as risk (UN, n.d.-a). Disaster risk, is defined by the United Nations International Strategy for Disaster Reduction (UNISDR), as 'the potential loss of life, injury, or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time, determined probabilistically as a function of hazard, exposure, and capacity' (UNISDR, 2009, pp. 9-10). Furthermore, there should be policies and strategies to help prevent, reduce and manage disaster risk. The UNISDR defines DRM as:

> The systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster. (UNISDR, 2009, p. 10)

The above definition states that DRM requires a systematic process to implement strategies and policies that aim to strengthen resilience and reduce the impact of hazards. The importance of DRM was captured in the 2005–2015 Hyogo Framework for Action document, which recognised DRM as essential to help build the resilience of nations. The application of DRM is not limited to countries, but also applies to organisations to help strategise interventions for managing disaster risks. For example, the Food and Agriculture Organisation of the United Nations defines the scope of DRM as beyond DRR. DRR refers to 'the conceptual framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development', whereas DRM 'includes but goes beyond DRR by adding a management perspective that combines prevention,

mitigation and preparedness with response' (Baas, Ramasamy, DePryck, & Battista, 2008, pp. 5,6).

Aligning DRM with the Global Agenda

It is paramount to continuously integrate humanitarian issues into the development agenda as it lessens the impact of a crisis. The Sendai Framework aims to guide the planning, implementation, monitoring and evaluation stages of a DRM plan. The Sendai Framework was developed alongside the 2015–2030 SDGs. Thomalla et al. (2018) highlighted the importance of linking development and disaster. They argued that 'disaster risks and impacts are closely tied to development processes and initiatives; development can increase or decrease the exposure, vulnerability and resilience of societies, while disasters destroy assets and undo development gains' (p. 1). A disaster has a cycle that comprises mitigation, preparedness, response, and recovery/rehabilitation phases. The disaster cycle is explained in Figure 6.

Figure 6: Disaster cycle (source: UNISDR, adopted from Alexander, 2002)

According to UNISDR's terminology (UNISDR, 2009), mitigation is defined as 'the lessening or minimising of the adverse impacts of a hazardous event' (p. 19). Preparedness is defined as 'the knowledge and capacities developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters' (p. 21). In addition, response is defined as 'actions taken directly before, during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected' (p. 24). Finally, recovery is described as 'the restoring or improving of livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems and activities, of a disaster-affected community or society, aligning with the principles of sustainable development and "build back better", to avoid or reduce future disaster risk' (p. 23). In a recent literature review, Goldschmidt and Kumar (2016) argued that the majority of humanitarian-related studies focused on the response phase, followed by the preparedness and mitigation phases. They reported that little research has been conducted on humanitarian development. Based on this argument, the application of DRM, according to the United Nations Food Agriculture Organization, would provide opportunity to link the disaster cycle with the development agenda (Baas et al., 2008). Similarly, Tran et al. (2015) argued that the disaster cycle could be an avenue for both humanitarian and development institutions to have a joint role in addressing reproductive health in humanitarian settings.

A number of countries have drafted DRM-related policies and strategies that recognise the importance of DRM in bridging humanitarian and development phases. As part of this process, several international organisations have provided technical assistance for a number of developing countries. For example, the International Federation of Red Cross and Red Crescent Societies supported some countries (e.g. South Sudan) to develop DRM policies (IFRC, 2017). Furthermore, in 2009, the UNISDR and the World Bank developed a list of priority countries (including Indonesia) that needed DRM programmes. This aimed to enhance the resilience of countries considered to have low economic status, as well as highly vulnerable countries (Bank, 2009). Indonesia, the Marshal Islands, Papua New Guinea, Solomon Island and Vietnam were among countries

across East Asia and the Pacific prioritised to receive technical assistance to improve their DRM capacity.

With the increased number of countries that have developed and implemented MRH policies and strategies, demand to measure the effectiveness of these policies and strategies has also increased. A study by Carreño, Cardona and Barbat (2007) reviewed DRM in 10 countries across Latin America and the Caribbean using the Risk Management Index (RMI). The RMI is a quantitative tool used to measure organisational, development, capacity and institutional actions taken to lessen the vulnerability level. Although the RMI could assess the implementation of DRM at national and sub-national levels, that study acknowledged the limitations of this tool. Those authors suggested there was room for improvement, as the RMI did not capture qualitative information to understand the 'how' and 'why' behind the implementation of DRM policies and strategies. Currently, researchers are debating over measuring DRM progress by looking at traditional top-down approaches. They argued that measuring DRM progress should use a people-centred approach and consider the local context. Scolobig, Prior, Schröter, Jörin and Patt (2015) indicated that a people-centred approach is bottom-up, egalitarian, collaborative, proactive and focused on stakeholders' preferences, whereas traditional top-down approaches are more discipline-oriented, hierarchical and interventionist. Furthermore, they also argued that the emphasis of a people-centred approach is system-oriented, rather than discipline-oriented. Therefore, it provides opportunity for integration among different disciplines and a chance to consider them as part of system, as well as better opportunities for different disciplines to implement interventions in both the humanitarian and development arenas (Scolobig et al., 2015).

Maternal health issues have been increasingly prioritised on the development agenda; however, there is more work to be done on the humanitarian agenda. Smith and Shiffman (2016) explored MRH in the context of the development and humanitarian agendas and found that although maternal health had gained status as an international health and development priority (in part through the focus of the MDGs and SDGs), challenges remained within the humanitarian agenda, such as donor interest to fund MRH interventions during disaster and post-disaster responses, and collecting data for evidence from humanitarian settings.

Chynoweth (2015) argued that despite the significant increase of commitment to support MRH on the humanitarian agenda, key challenges include insufficient funding to support the provision of MRH services in humanitarian settings and ineffective integration in the internal and external health sectors. Moreover, a systematic review by Casey (2015) suggested documentation and evaluation of MRH interventions during disasters remains a major gap, along with limited access to MRH services in humanitarian settings. Unfortunately, this lack of evidence on the maternal health situation in humanitarian settings results in less attention to the issue by donors and other stakeholders.

Knowledge and skills related to humanitarian responses among health providers are still considered insufficient, and impacts availability of life-saving MRH services during disasters. An important effort to link the humanitarian and development agendas is equipping personnel with sufficient knowledge and skills related to disaster management. Beek, McFadden, and Dawson (2019) argued that educating midwives on MRH and disaster is important as they play a crucial role in preparing for and providing MRH services in humanitarian settings because of their position as frontline providers, and social and geographical proximity to communities. Therefore, building the capacity of health personnel in MRH services needed during emergency situations ensures the provision of basic and comprehensive MRH services during and after a disaster. To properly equip health personnel, training should be provided to those who have already graduated and are working in the health field, as well as through the integration of disaster management into medical, nursing and midwifery curricula. The MISP for reproductive health in crisis situations recommends training for health personnel as a key activity to enable the provision of comprehensive MRH services (WRC, 2011).

Understanding DRM in Indonesia

Indonesia is one of the most disaster-prone countries in the world. As explained in the previous chapter, among 109 countries, Indonesia is ranked 55 for overall risk, 17 for hazard and exposure, 104 for vulnerability and 81 for lack of coping capacity (IASC, 2019; OCHA, 2019). Indonesia's position within the Pacific Ring of Fire makes it one of the world's most susceptible nations to natural disasters (Gero, Meheux, & Dominey-Howes, 2010). Indonesia has recorded numerous cases of disasters (BNPB, n.d.-b); more than 22,000 cases of natural and man-made disasters occurred in Indonesia since 1815.

Among these, more than 18,000 events occurred after 2007. These disasters were both natural and man-made events (BNPB, n.d.-b).

Following the 2004 Indian Ocean tsunami, Indonesia changed the way it looked at disasters. Birkmann (2010) published a case study on the changes caused by extreme events and disasters focused on the 2004 tsunami, and reported that the event provided a window opportunity for the country to revise its disaster policies, as the tsunami impacted the socio-ecological system in Indonesia. Following the 2004 tsunami that hit Indonesia (specifically Aceh and northern parts of Sumatra), Indonesia was 'pushed' to revitalise BNPB. The BNPB provides direction and guidance related to mitigating, preparing for, responding to and recovering from a disaster, and is also responsible for translating disaster management policy into practice and recording and reporting related disaster efforts in Indonesia. The BNPB has been expanded and established at provincial, district and municipal levels. To date, efforts to improve coordination include establishing links with other line ministries, including the Ministry of Health of Indonesia. The Disaster Management Law No. 24/2007 was enacted to guide how the Government of Indonesia manages disasters. Indonesia has also created a database that is linked with the ASEAN's Humanitarian Centre, UNISDR and other regional and global databases to track disasters that occur in the country. This helps Indonesia to prepare and determine their level of readiness for responding to a disaster (BNPB, n.d.-b).

Despite efforts to strengthen Indonesia's DRM, Indonesia has not yet been able to adequately translate its policies into practice. This includes mainstreaming DRM efforts into other sectors during emergency response at the provincial and district levels. A study by Djafri, Chongsuvivatwong and Geater (2015) highlighted challenges faced at the provincial and district levels during the 2009 earthquake in Padang, where local authorities were not able to provide an immediate response to the affected population. That study reported it took more than 1 year to recover water supplies. The earthquake also resulted in the disruption of MRH services, increased the rate of stillbirths and slowed the rate of improvement in maternal and child mortality. Those authors recommended local government should play a more active role in improving its disaster management capacity including coordination and cooperation with the health sector.

Finally, although considerable efforts have been made at the policy level, some work remains to be done at the community level. A qualitative case study by Lavigne et al. (2008) aimed to understand how the Indonesian people living near or on the slopes of active volcanoes behaved in the face of volcanic threats; the results showed a lack of knowledge about disaster safety and protection, particularly among women. Those authors interviewed women and men who lived around four different volcanic mountains in Indonesia, and found these communities had a poor understanding of the actual volcanic processes, socioeconomic issues and strong cultural beliefs that made the local people not want to live far from their birth village. The cultural beliefs resulted in hesitance to be relocated to a safer place, and the socioeconomic factors related to people's livelihoods and skills.

1.3.3. Integration

Defining Integration

Integration is defined as an action or process of joining or combining two or more things in an effective way. Keast, Brown and Mandell (2007) argued that integration has three stages: cooperation, coordination and collaboration. First, cooperation is defined as the starting point or the base level of a relationship. It has a limited connection and low intensity. Second, coordination is defined as the notion of 'driving', and involves working towards a common target. It has medium connections and intensity. Lastly, collaboration is defined as a process that requires high connection and intensity. These steps comprise a horizontal integration continuum (Keast et al., 2007), and are summarised Figure 7.

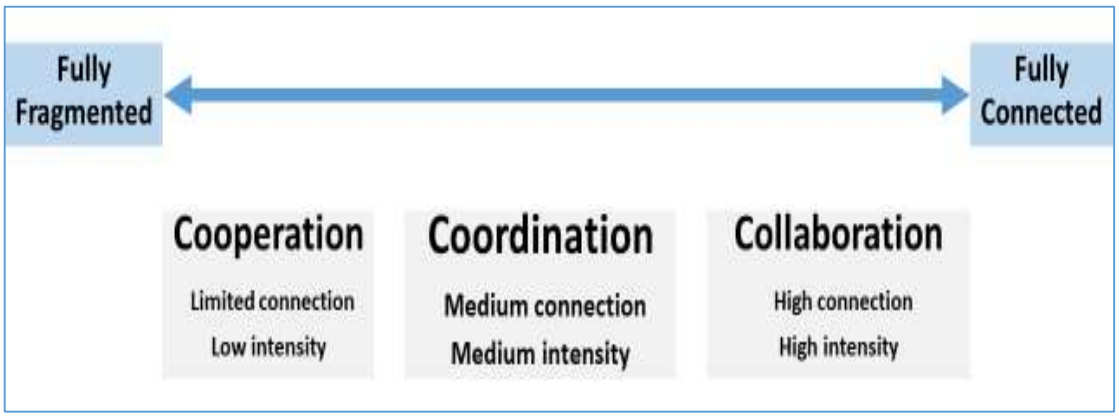

Figure 7: Horizontal integration continuum (source: Keast, Brown, & Mandell, 2007)

In considering these steps, it is evident that integration is not a static process, but rather requires differing connections and intensities among those involved in the process. Before achieving the 'fully connected' level, integration starts with cooperation. Konrad (1996) and Keast et al. (2007) suggested cooperation can be characterised as autonomous and independent. They argued that cooperation is limited to informal relationships and a short term. Given its limited connection and low intensity, the cooperation level manifests in activities such as information sharing that do not require follow-up action.

After cooperation, the next step of integration is coordination. This step involves a low level of commitment. Lawson (2002), as cited in Keast et al. (2007), characterised coordination as actions that involve compliance with others to meet needs and solve a problem. This medium level of connection and intensity requires a particular goal that involves lower levels of time, processes and risk (Keast et al., 2007).

Finally, the last level of integration is collaboration, which is a long-term type of arrangement and is considered the most stable step. Keast et al. (2007) and Sitas et al. (2016) argued that this level requires a longer time and additional processes, is challenging and involves the highest degree of risk. Furthermore, Sitas et al. (2016) noted that cooperation requires working to and across boundaries. Collaboration results in being 'fully connected', which is reflected in shared goals, commitment and joint efforts. To achieve collaboration, it is necessary to have sufficient time for the process of making connections, forming relationships and drawing resources closer together.

Realising the Need for Integration with DRM

The notion of a humanitarian-development nexus requires integration between humanitarian and development agendas. The United Nations described this integration process as a 'new way of working' (OCHA, 2017). This reflects how humanitarian interventions that require significant cost and time can only be sustained through better connectivity with development interventions. The adoption of humanitarian language into the 2030 SDGs indicates that efforts to reduce risks, vulnerability and overall needs could be achieved by having 'collective outcomes' (OCHA, 2017). Humanitarian assistance defines as "aid that seeks, to save lives and alleviate suffering of a crisis affected population" (UNOCHA, 2008, p. 31). Humanitarian assistance must be provided in accordance with the basic

humanitarian principles of humanity, impartiality and neutrality. The nature of humanitarian aid include: short-term, usually initiated in both natural and man-made disasters, as well as focus on life-saving. The United Nations General Assembly 51/240 on Agenda for Development defines development as "a multidimensional undertaking to achieve a higher quality of life for all people. Economic development, social development and environmental protection are interdependent and mutually reinforcing components of sustainable Development" (UN, 1997, p. 1). Development assistance usually long-term, delivered in developing countries, responds to systematic problems, and focused on economic, social, and political development (HumanitarianCoalition, n/a). These collective outcomes are defined as having a 'quantifiable and measurable result or impact in reducing people's needs, risks, and vulnerabilities, and increasing their resilience…that requires the combined efforts of different actors' (OCHA, 2017, p. 7). This suggests that humanitarian and development actors should work together according to the same plan towards the same goal. The United Nations indicated that integrating efforts, could be achieved through four main actions: joint situation and problem analysis; joint planning and programming; joint coordination and clear leadership; and flexible financing modalities (OCHA, 2017, pp. 10,11). These four key actions toward integration may result in strong national and local ownership, as well as comparative advantages among different stakeholders.

The health sector is also starting to consider ways to integrate interventions into DRM. Henley, Marshall and Vetter (2011) discussed how mental health services could be integrated into humanitarian relief and post-disaster settings. Using the September 11 terrorist attack in New York as a case study, those authors described how integration resulted in increased collaboration between mental health providers and humanitarian personnel and increased awareness of the importance of mental health issues, as well as the availability of integrated services that benefited communities. Furthermore, they described another example of mental health services integration using the case of Liberian and Sierra Leonean war survivors living in refugee camps in Guinea. They explained how integration resulted in a significant reduction of trauma symptoms among war survivors, as well as increased relationships and work efficiency among mental health and other service providers. These case studies provide good evidence that integration benefits both providers/stakeholders and those who are using the services (e.g. communities).

In the area of sexual and reproductive health, efforts to integrate these services into health emergency and DRM have also been initiated. In 2012, the Reproductive Health Sub-Working Group of the UNISDR/WHO Thematic Platform for Disaster Risk Management for Health issued a policy entitled 'Integrating sexual and reproductive health into health emergency and disaster risk management'. This policy stated the importance of integration and provided five priority actions for integration (WHO, 2012b). The policy discussed how countries with higher MMRs were in particularly vulnerable circumstances, including countries that were disaster-prone and affected by conflicts. However, integration efforts also face a number of challenges. Casey, Chynoweth, Cornier, Gallagher, and Wheeler (2015) argued that the readiness and capacity of countries to ensure MRH services during disaster response varies. Therefore, issues such as poor commodity management and security (which is a mechanism used to ensure availability of MRH supplies) that lead to poor-quality MRH services during disaster response remain outstanding challenges. Tanabe, Pecourt, Hashmey, and Goswami (2016) highlighted factors such as limited financing for sexual and reproductive health preparedness, limited engagement at community and policymaker levels and lack awareness and coordination as contributing to the challenges in establishing robust best-practice evidence to demonstrate the process of integration. Finally, to date, there have been a limited number of studies focused on the integration of MRH into DRM that would help to provide a more in-depth understanding of the levels of integration in this context.

History of the Integration of MRH into DRM at Global, Regional and National Levels

The milestones of integrating MRH into DRM, based on the literature review, are summarised in Figure 8.

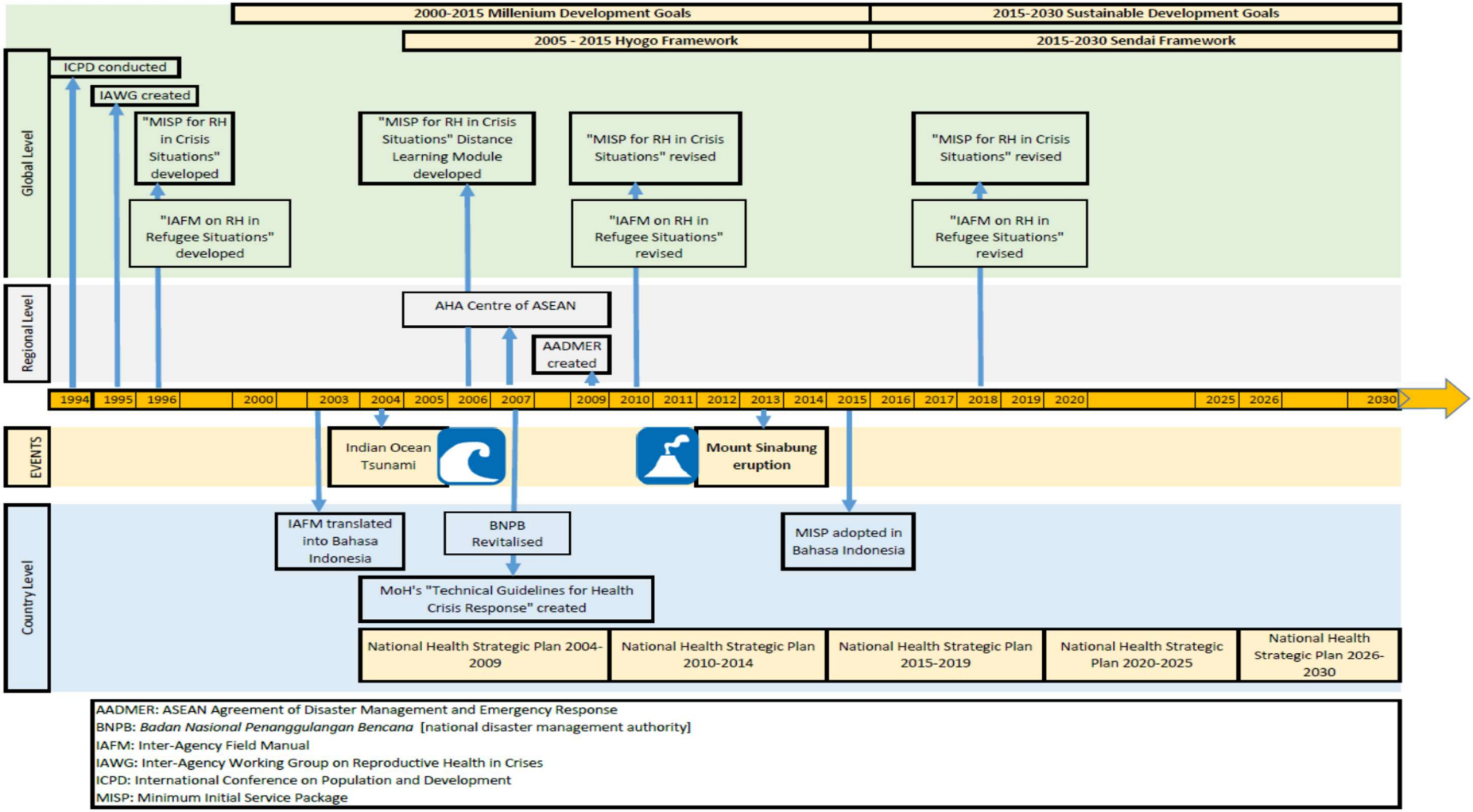

Figure 8: Milestones of integration of MRH into DRM, based on the reviewed literature

a. Integrating MRH into DRM at the global and regional level: an ongoing process

Recognition of the importance of reproductive health as a human right was formalised in 1994 during the ICPD. The ICPD laid out four goals related to universal education, reduction of infant and child mortality, reduction of maternal mortality and ensuring access to reproductive and sexual health services (including family planning) (UNFPA, 2014). This was followed by the development of the Beijing Platform for Action in 1995 that highlighted the importance of women's empowerment (UN, 1995), including the notion that 'women's rights are human rights' (p. 3). This document also recognised the need to 'ensure equal access to and equal treatment of women and men in education and health care and enhance women's sexual and reproductive health as well as education' (p. 4). However, despite the work of the ICPD and Beijing Platform for Action, efforts to ensure access to reproductive and sexual health services (including family planning) still face a number of challenges. Fathalla (2015) noted that not every country is able to implement ICPD and Beijing Platform for Action recommendations because of political situations that prevent people from accessing health information and services, inequity between and within countries and ideological factors.

In the areas of MRH and DRM at the global level, various organisations representing the United Nations, governments, research institutes, non-governmental organisations, donors and activists formed the IAWG in 1995. This group aimed 'to advance the sexual and reproductive health of people affected by conflict and natural disaster' (IAWG, 2018). The IAWG produced documents and guidelines to build capacity and awareness on the importance of meeting reproductive health needs in the humanitarian context, and highlight the importance of linking the emergency and development phases. In 1996, the IAWG developed the Reproductive Health in Refugee Situations: An Inter-Agency Field Manual, which outlined the importance of continuing provision of MRH services during periods of disaster. This manual introduced a coordinated set of priority activities (i.e. MISP) for reproductive health in crisis situations. To date, this has undergone several revisions, including in 2010 and 2018. A MISP distance learning module was developed in 2006, which has also undergone several revisions, including in 2007, 2011 and 2018 (IAWG, 2018). However, Onyango, Hixson, and McNally (2013) noted that there has been no comprehensive evaluation of MISP implementation to show its impact during emergency response. In relation to the 2018 MISP edition, Tran

and Schulte-Hillen (2018) emphasised stakeholders and first-line responders should carefully examine the guidelines before implementation, as the 2018 MISP had been expanded and no longer focused on life-saving interventions. Those authors criticised the guideline revision process that lacked consideration of essential field-oriented activities, supplies and immediate life-saving for affected people.

The 2004 Indian Ocean tsunami affected around 15 countries across the Indian Ocean, including Indonesia, Sri Lanka, India, Thailand, Somalia, Myanmar, the Maldives, Malaysia, Tanzania, Seychelles, Bangladesh, South Africa, Yemen, Kenya and Madagascar. This event changed the way people perceived disaster and development contexts. The 2000–2015 MDGs that were signed by the world community in 2000 did not recognise the importance of DRR (Cannon, 2007). In 2005, the Hyogo Framework for Action was created to provide guiding principles, practical guidelines and priorities for actions to reduce disaster risk. Disasters were recognised as a key factor holding back progress on the global development agenda (Cannon, 2007; UNISDR, 2005, 2015). Following implementation of the MDGs and the Hyogo Framework for Action, Mukuna and Manyasi (2015) highlighted a missing link between the two documents that resulted in the omission of important aspects of understanding vulnerability during disasters. Similarly, Zia and Wagner (2015) argued that gaps in the two documents had affected implementation. They stated that both documents were lacking in addressing the underlying disaster risk factors such as poverty and inequality, unplanned and rapid urbanisation, climate change and pandemics and epidemics (UNISDR, 2017). Moreover, although efforts to integrate disaster risk into the development agenda were made during implementation of the MDGs and the Hyogo Framework, not all goals were reached. In the area of maternal health, many countries (particularly the least-developed countries) targeted reducing the MMR by three quarters, which was not achieved. Maternal death cases occur and may even increase during disasters (WHO, 2012a). Having evaluated the achievement of health-related goals, the WHO (2012a) stated in its Post 2015 Development Agenda Report that this was ‘unfinished business’. The report recognised the importance of sexual and reproductive health; this issue was adopted as a MDGs target in 2007, and is still considered a priority.

The international community set up another development agenda through the 2015–2030 SDGs, which replaced the MDGs with a strategy that emphasised a ‘sustainable,

safer, more prosperous planet for all humanity' (UN, n.d.-b). Subsequently, the Paris Agreement and the Sendai Framework were developed in 2015 to highlight the importance of the environment and the climate change issues that impact the development agenda. These agreements set common standards and targets for managing natural disaster-related risks, climate change and building back better after a crisis (UN, 2018). The importance of meeting MRH needs during a disaster was captured in the Sendai Framework (paragraph 30): 'Strengthening the design and implementation of inclusive policies and social safety-net mechanisms, such as supporting access to basic health-care services, including maternal, newborn, and child health, sexual and reproductive health' (Aitsi-Selmi & Murray, 2015, p. 1).

Despite efforts to integrate MRH into the global DRM agenda, the mechanisms in place, including the availability of data for measuring progress, are at different capacities and readiness in each country. Lack of resources, including financial, human capital and technology (i.e. tools and devices), are factors that hamper efforts to improving health status. Maini, Clarke, Blanchard and Murray (2017) argued that the different capacity and readiness in each country may result in comparability issues, especially given the unavailability of robust and complete data. Therefore, the availability of data collection and reporting guidelines developed in close consultation with different stakeholders is crucial. In addition to data collection and use, Galati (2015) argued that financial support and political will are factors that play important roles in translating the global agenda into action. The United Nations Population Fund's 2015 State of World Population Report noted that despite increased recognition of the importance of meeting MRH needs in the humanitarian context and linking them with the development agenda, funding needs are still not proportional compared with funding actually received (UNFPA, 2015a). This reflects a significant gap in efforts to improve the world's maternal health status.

At the regional level, following the 2004 Tsunami, ASEAN recognised that Southeast Asia is the most disaster-prone region in the world (ASEAN, 2017). ASEAN demonstrated its recognition of the importance of DRM through the creation of ASEAN Agreement on Disaster Management and Emergency Response in 2009. This document describes arrangements for cooperation, coordination, resource mobilisation and technical assistance for all aspects of emergency response and disaster management. It was

developed in line with the Asia-Pacific Economic Cooperation (APEC) DRR Framework, which aimed to contribute to adaptation and disaster-resilience across the Asia-Pacific region (APEC, 2015; ASEAN, 2017). The APEC DRR Framework has four pillars: prevention and mitigation; preparedness; response; and rehabilitation and build back better (APEC, 2015). This was followed by the establishment of a Coordinating Centre for Humanitarian Assistance on Disaster Management in 2011, which aimed to 'facilitate cooperation and coordination of disaster management amongst the ASEAN Member States' (AHACentre, n.d. , p. 1). In 2016, ASEAN members signed the Declaration on One ASEAN One Response, which stipulated how countries across the region were to cooperate in tackling disasters in a united effort. The ASEAN Vision 2025 on Disaster Management was published in the same year (ASEAN, 2017). Despite these strategies being in place, Kamolvej (2019) argued that capacity across different ASEAN countries varied, which affected the level of readiness. Economic status, disaster risk and awareness, cultural diversity, management systems and exposure to hazards contribute to the capacity of each country and the overall ASEAN community to respond to disasters.

A crucial effort to integrate health into disaster management was the development of the ASEAN Technical Working Group on Pandemic Preparedness and Response in 2011 (ASEAN, 2017). This group comprised focal points from the health, agriculture and disaster management sectors. The aims were 'to enhance and promote coordination in pandemic preparedness and response at the regional and national levels' (ASEAN, 2010, p. 1). Efforts to improve health status across ASEAN member countries were demonstrated through a joint statement for 'Healthy People, Healthy ASEAN' released in 2010. This was followed by the establishment of the ASEAN Strategic Framework on Health Development 2010–2015 and the ASEAN Post-2015 Health Development Agenda 2016–2020. The ASEAN Health Development Agenda highlighted the aim to improve the health status of ASEAN countries by achieving universal access to healthcare and improvement of maternal health status, as well as ensuring effective preparedness for disaster health management (ASEAN, 2016).

b. Integrating MRH into DRM in Indonesia: an Ongoing Process

At the country level, efforts to meet MRH needs during a disaster were implemented through various measures. In 2003, the Ministry of Health of Indonesia adopted and

translated the IAWG's Reproductive Health in Refugee Situations. The implementation of MISP during the response to the 2004 tsunami aimed to meet the MRH needs of the affected population. The Government of Indonesia and international organisations implemented life-saving MRH services to more than 11,000 tsunami-affected pregnant women in Aceh province. Krause and Matthews (2005) assessed the MISP implementation in the 2004 tsunami in Aceh, and reported that this had helped to save the lives of women and other affected populations. However, they also found there were gaps, including insufficient coverage of MRH services during the implementation of MISP due to funding availability. The assessment recommended the allocation of funds to support the provision of life-saving reproductive health services. Efforts to integrate MRH into DRM were formally stated in 2007, after the inclusion of MISP in the National Technical Guidelines for Health Crisis Response on Disaster from the Ministry of Health of Indonesia. The National Technical Guidelines provided a 'reference for health personnel in responding to the disaster-caused health in crisis' (Indonesia MoH, 2007, p. 3). Furthermore, the document set standards for the management of health services, data and information systems when responding to health crises. The second revision of the National Technical Guidelines was conducted in 2011, and placed emphasis on the management of health crisis response according to current institutional arrangements, as well as on the context that suits the country's situation.

The importance of improving MRH status and health crisis management was captured in the Indonesian Ministry of Health Strategic Planning 2010–2014, and continued with the current strategic planning for 2015–2019. The strategic plan document clarifies key health development activities and targets to improve the health status of the country in both normal and crisis conditions (Indonesia MoH, 2015b).

Efforts to adopt the global MISP guidelines through capacity building and advocacy continue. Since 2004, the Ministry of Health of Indonesia and UNFPA, along with various non-governmental organisations, have provided training for health providers and stakeholders, including policymakers. In 2015, the Ministry of Health of Indonesia adopted the global MISP into the country context, with this newly developed version called *Pedoman Pelaksanaan Paket Pelayanan Awal Minimum (PPAM) Kesehatan Reproduksi Pada Krisis Kesehatan* (Indonesia MoH, 2017). UNFPA has been supporting the government to implement MISP during disasters through the provision of life-saving

sexual and reproductive services. The government implemented the MISP during the 2018 tsunami, earthquake and liquefaction in Central Sulawesi province (UNFPA, 2019). In addition, various MRH documents, including the Inter-Agency Reproductive Health Kits for Crisis Situations, were also adapted to the Indonesian context. The Ministry of Health of Indonesia also developed and actively maintained a Reproductive Health Sub Cluster, which aims to coordinate and plan provision of MRH during a health crisis through preparedness, response and relief recovery efforts. To date, no research has analysed the implementation of MISP during disasters in Indonesia.

The Reproductive Health Sub Cluster is managed by the *Kesehatan Keluarga* (Family Health Unit), and closely coordinated with the Ministry of Health Crisis Centre. The Unit is responsible for the implementation of maternal, neonatal, child and adolescent, youth, reproductive and older adult health programmes. Furthermore, the Crisis Centre was created in 1991 and coordinates the management of health crises using mitigation, prevention, response and recovery measures (Indonesia MoH, n.d.). The Crisis Centre coordinates their work with BNPB, which represents the health authority.

Given the frequent disasters in Indonesia, the BNPB has changed in terms of its goals, strategies, priority actions and institutions. Indonesia's first national disaster management authority was created after the independence of Indonesia in 1945. This was initially called the War Victim Family Assistance Agency, and was tasked with helping survivors of war and their families during the independence period (Indonesia MoH, n.d.). From 1945 to 2004, the national disaster management structure went through several changes, including the revision of its official name and mandate. Following the 2004 tsunami, the Government of Indonesia issued Presidential Regulation Number 8/2008, which changed the name of the disaster management body to BNPB (*Badan Nasional Penanggulangan Bencana*). The Presidential Regulation also stated that the main task of the BNPB was 'to coordinate the implementation of disaster management activities, in a planned, integrated and comprehensive manner' (BNPB, n.d.-a). Efforts to coordinate and cooperate with other sectors, including health, are stipulated in the BNPB 2015–2019 National Disaster Management Plan. This document recognised and identified issues related to 'unfinished business' in the ongoing integration efforts, including coordination and collaboration with other key stakeholders (e.g. health, public work and social welfare authorities) (BNPB, 2014, p.

49). During the 2018 tsunami, earthquake and liquefaction in Palu (Central Sulawesi province), the BNPB was criticised by the international community for not allowing foreign aid workers to enter affected areas. That decision resulted in discussion of pros and cons among humanitarian workers (TheGuardian, 2018). A case study by Inan, Beydoun, and Pradhan (2018) aimed to understand the decision support system in the BNPB using the case of the 2018 eruption of Mount Agung in Bali. That study revealed that although there have been top-down and bottom-up approaches within the BNPB, there is a need to develop a holistic and comprehensive disaster management plan (i.e. DISPLAN) that serves a guide for stakeholders to manage disaster in timely fashion. These two articles suggest there is continuous room for improvement within BNPB in Indonesia.

1.4. UNDERSTANDING MRH DURING DISASTERS IN INDONESIA USING THE SOCIO-ECOLOGICAL MODEL (SEM)

A theoretical perspective was needed to provide a conceptual lens to view MRH situations during disasters in Indonesia. Many models have been applied to understand DRM and health (Blaikie et al., 2014; Folke, 2006; Onono et al., 2015; Platt, Brown, & Hughes, 2016), including the PAR model, vulnerability analysis matrix and the SEM.

The PAR model (Blaikie et al., 2014) aims to understand: root causes (e.g. political, socioeconomic and cultural aspects); dynamic pressure (e.g. human resources capacity and investment); and unsafe conditions (e.g. policy and infrastructure). This model explains the level of risk by describing a broad view of vulnerability. However, the PAR model does not measure progression or comprehensively analyse the level of risk (Blaikie et al., 2014). The vulnerabilities analysis matrix is a model that measures vulnerabilities and capacities from three broad and interrelated areas (organisational, motivational and materials/physical). This helps to understand many aspects of vulnerabilities and capacities. However, as a research limitation, the model could not be used to analyse the interaction between human and natural hazards (Preston & Stafford-Smith, 2009). The SEM was developed by Bronfenbrenner (2005) and aims to understand the dynamic between individual and environmental factors. This helps to clarify how the surrounding environment shapes human development and influences

the attitude of each individual (Moskell & Allred, 2013). This model also helps in understanding how the environment contributes to the level of resilience among individuals and communities in responding to disasters (Cretney, 2014; Cutter et al., 2008).

After analysing the different models, the SEM was chosen as the framework to structure the findings and discussion of the present case study. The SEM was chosen because it helps to identify the interaction between individual MRH needs and how these needs are being met within the influence of family, communities, the environment, existing systems and policies. Furthermore, it helps to understand the linkages between the overall provision of MRH services and disaster response by looking beyond health sector readiness.

1.4.1. Defining the SEM

The SEM was initially introduced by Urie Bronfenbrenner in the early 1970s and finalised in the 1980s (Bronfenbrenner, 1976, 1993, 1994, 1999, 2005). The model was first designed to understand human development. Bronfenbrenner (1994) argued that human development relates to the interaction between social and ecological factors.

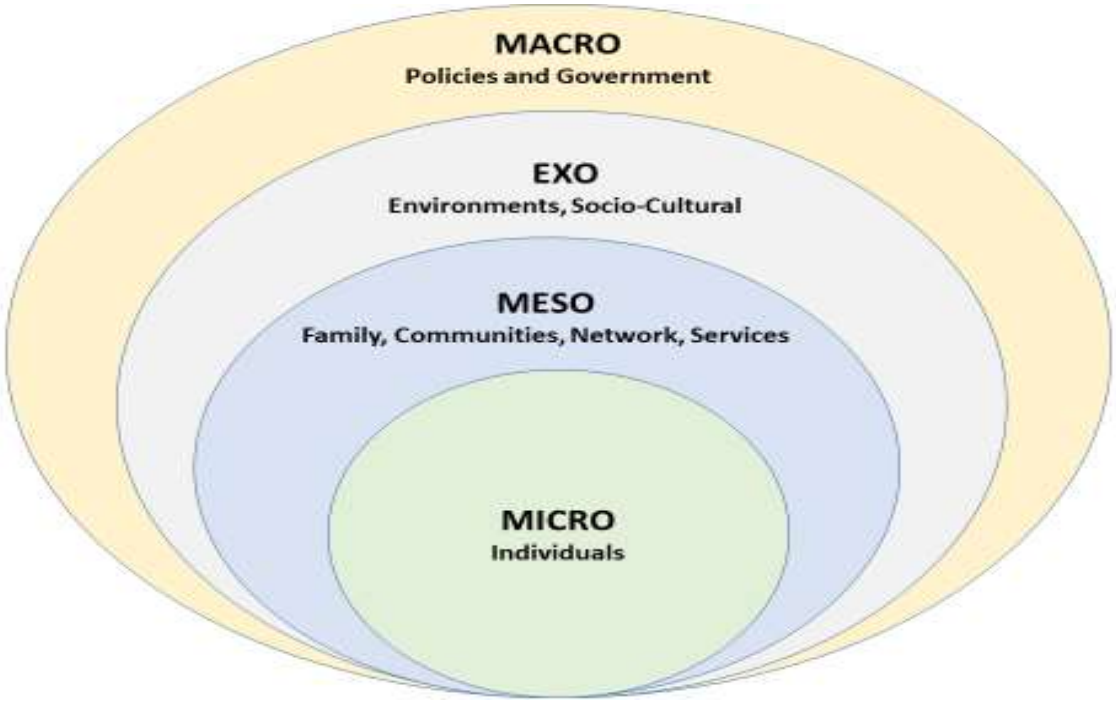

Figure 9: Socio-ecological model developed by Bronfenbrenner (1994) (source: http://projecthope.blogspot.co.nz/2012/10/social-determinants.html)

The SEM has four main elements that interlink, inter-relate and inter-depend within a system.

- First, the **microsystem** is the immediate setting surrounding the individual.
- Second, the **mesosystem** is another layer that immediately surrounds the individual. This layer could also be a system of two or more microsystems.
- Third, the **exosystem** is the linkage and process that takes place between two or more settings.
- Lastly, the **macrosystem** relates to the culture or subculture surrounding the individual, including political, legal, social and economic factors (Bronfenbrenner, 1993, p. 645).

In addition, there is another layer called the **chronosystem**, which includes the dimension of time (Bronfenbrenner, 1976; Bronfenbrenner & Morris, 1998).

Application of the SEM in DRM

The SEM has been increasingly used in the field of DRM to understand resilience. According to UNISDR, resilience is 'the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions' (UNISDR, 2009, p. 24). This refers to the ability to spring back from a shock or disaster, which is influenced by the socio-ecological system. Sajjad, Li, Li, Chan, and Khalid (2019) conducted research to understand how typhoons affect the level of resilience among coastal communities in Mainland China using the SEM. The model helped those researchers to better understand the level of resilience by considering different dimensions (e.g. social, ecological, institutional, economic and safety). These dimensions fit into the layers of the SEM. Moreover, Sun, Chau, Wong, and Woo (2017) used the micro-,meso-, exo- and macro-levels of the SEM to understand how place and age influenced level of DRM among older adults in Hong Kong. The SEM provided a better understanding of individual and social vulnerabilities and how the environment contributed to the readiness of older adults to reduce risk when a disaster occurred.

Application of the SEM in Public Health

The SEM is widely used in various public health-related fields, including HIV/AIDS, gender-based violence and family planning. However, the application of the model remains limited in MRH. To date, no study has applied the SEM to specifically understand issues related to the management of emergency obstetric care and referral mechanisms. In the field of HIV/AIDS, Chimphamba Gombachika, Fjeld, Chirwa, Sundby, and Maluwa (2012) used SEM to study barriers to accessing sexual and reproductive health services among couples living with HIV in southern Malawi. The SEM provided in-depth understanding of interpersonal-level factors such as partners' attitudes and beliefs, misinformation and family structure. Another study that used the SEM was conducted by Onono et al. (2015) to understand individual, social and ecological factors that influenced the operationalisation of prevention of mother-to-child transmission (PMTCT) services among HIV-positive pregnant women in western Kenya. The SEM helped to reveal barriers to women's use of PMTCT services at individual, family, society and structural levels. Finally, the US Center for Disease Control and Prevention used the SEM to understand the prevention and management of gender-based violence and family planning (CDC, 2015). The SEM offered a way to better understand how individuals, relationships, communities and society interacted and influenced the incidence of violence.

Limitations of the SEM

Application of the SEM has a number of limitations. Stokols (1996) used the SEM to study community health promotion, and highlighted that this model could not effectively explore key risk factors that influenced community health promotion. Similarly, Claire (2016) and Chatzinikolaou (2013) reported limitations of the SEM, including insufficient analysis to explain how micro, meso, exo and macro variables interacted across these layers, as well as a lack of specificity about the most important hypotheses that influenced the layers. Therefore, when using the SEM, additional operational models should be used to guide analysis. Finally, Tudge et al. (2016) argued that the model could be misused by applying it in a static way instead of considering the dynamics between people and environments. When the model is used in a static way without analytically relating the individual characteristics, context and time across all layers of the model, any understanding will be superficial (Tudge et al., 2016).

1.4.2. Locating the SEM for MRH in disaster response in Indonesia

The following is a summary of relevant studies on MRH and DRM in Indonesia that were structured using the SEM. Given the context of this study, the micro-level is limited to findings related to individual and local communities, particularly local beliefs, familiarity with disaster terms and women as a vulnerable group. The meso-level is limited to the provision of MRH during disasters, particularly in relation to health infrastructure and logistics, monitoring and reporting and the level of readiness of health staff to provide services during disasters. The exo-level is limited to a community's infrastructure during disasters, and how communities engage during disasters. Finally, the macro-level is focused on the current political environment in Indonesia, mainly related to decentralisation, as well as the commitment and priorities to meet MRH demands during disasters.

Micro-Level: Individuals and Local Communities

- Traditional beliefs still dominate knowledge about disaster risk at the individual level

In the Indonesian context of being a disaster-prone country, the population have become familiar with different types of disasters. Indonesians, particularly those in rural areas, relate disasters to certain beliefs. These beliefs construct and influence the level of resilience among the people, including the way they react to a disaster event. An ethnographic study by Donovan (2010) aimed to understand how culture and socioeconomic factors influenced community reactions to volcanic hazards in Indonesia. That study revealed the importance of understanding social norms within a community to help design strategies related to hazard-mitigation, including evacuation measures that included prioritisation of vulnerable groups (e.g. pregnant women) during a disaster. Donovan noted that as a nation that has a 'diverse, complex and deeply devout connection with environment…as a consequence often rely on their traditional, animistic beliefs during a crisis' (p. 118). That study found that during the 1963 eruption of Mount Agung in Bali, that location was believed to be the most sacred volcano; people from Bali believed that it was 'the dwelling place for both holy and evil deities' (p. 118). They believed that the lava flows represented their gods descending from the summit.

Gillard et al. (2008) argued that ethnic context played a significant role during disasters in Indonesia. That study aimed to understand people's behaviour in the face of natural hazards in terms of the influence of the cultural, social, economic and political context. The findings showed that during the 2004 Indian Ocean tsunami, more than 170,000 people died in Aceh and Minangkabau (mostly urban areas), whereas only 44 people from Simeuleu Island died. This was because the local people of Simeuleu Island (a rural area) were motivated to evacuate to higher ground during the 2004 event without formal instruction from any authority, based on oral history influenced by a previous tsunami that occurred over a century ago. Similarly, McAdoo, Dengler, Prasetya and Titov (2006) conducted research on Simeuleu Island and found that a 1907 tsunami had provided a major lesson for the local community, and the story of that event had been passed from generation to generation. This story in the local language was called *Smong,* which means tidal waves or tsunami. The story had been embedded within the community through social interactions since 1907 (Alfi Rahman, Sakurai, & Munadi, 2018). These studies from the 1963 eruption in Bali and the 2004 tsunami highlight the importance of drawing on indigenous knowledge when planning for disaster management. In a country like Indonesia, it is necessary to bring together local knowledge and 'modern' perspectives of disaster (A Rahman, Sakurai, & Munadi, 2017).

- Unfamiliarity with disaster risk terms

A study in post-tsunami Aceh that aimed to understand the common concept of post-disaster reconstruction (i.e. building back better), particularly in the context of post-disaster housing design (Rahmayati, (2016), revealed that affected communities did not understand and were unfamiliar with the term 'build back better'. In 2006, former US President, Bill Clinton, visited Aceh's disaster areas and suggested how to define building back better in Aceh's rehabilitation and reconstruction. Although this was recognised as the initial concept used for the post-disaster recovery environment, studies by Mannakkara and Wilkinson (2013) and Sankaran, Okay, Chroust, Mannakkara and Wilkinson (2014) suggested the concept needed to be revisited because awareness, and stakeholder participation seemed to be lacking during implementation. This resulted in people being less familiar with these terms. Even more than one decade after the Aceh tsunami, at the personal level, few people knew and were aware of disaster-related terms.

- Realising that women are more vulnerable than men

Despite local knowledge on disaster mitigation, women have less understanding and a lower chance of survival than men because of the cultural influence in most parts of the country. Mulyasari and Shaw (2013) investigated the role of women as risk communicators to enhance disaster resilience in Bandung (another part of Indonesia). They revealed that local culture affected and influenced how disasters impacted women differently than men. Women casualties were higher than men in the 2004 tsunami and earthquake events. Similarly, a multiple case study of people's behaviour in the face of volcanic hazards among Javanese communities in Indonesia by Lavigne et al. (2008) found that women had limited knowledge of the surrounding environment. They argued that, 'women usually have lower hazard knowledge than men. Women spend most of their time in the house or in the village while men are working on the tobacco fields. Women have limited knowledge of the surrounding environment' (p. 277). Like many other parts in Indonesia, in traditional Javanese culture, it is usually men who work and earn money while women stay home and take responsibility for handling the money earned by their husbands (Smith-Hefner, 2007). This tradition places women in a disadvantaged position; they become less aware of the situation outside the house, which makes them vulnerable to disasters.

Meso-Level: Provision of MRH Services During Disasters

- Inadequate health infrastructure and logistics

Most health facilities in Indonesia were not designed to cope with natural disasters, especially as health facilities are damaged during earthquakes, floods, eruptions or tsunamis (De Goyet, 2007; Novianingsih, Riyansyah, & Wibowo, 2017). Therefore, health infrastructure (including logistics, health information and referral systems) become disrupted during disasters. Kuscahyadi, Meilano, Hanifa and Virtriana (2018) stated that as Indonesia geographically lies on converging global tectonic plates, the country is highly prone to earthquakes. This means that health facilities are prominent infrastructure that could experience catastrophic damage, economic loss and loss of life as consequences of earthquakes. They calculated the impacts of the 2006 earthquake in Jogyakarta that destroyed 16 public hospitals, severely damaged more than 500 health facilities and caused in economic loss of up to 21 billion Indonesian rupiah (equivalent

to NZD21,000,000.00). Another retrospective qualitative case study by Widayatun and Fatoni (2016) aimed to analyse health problems during the 2006 earthquake in Bantul of Jogyakarta. That study highlighted limited access to antenatal care for pregnant women, as well as inadequate nutrition during the earthquake. It also mentioned that along with other vulnerable populations (e.g. older adults and people with special needs), women of reproductive age lacked information about and referral to basic health services. The earthquake destroyed health facilities and resources including medicines, ambulances and other logistics. Health personnel were forced to leave the affected areas, meaning the affected population who remained in temporary shelters did not have proper access to health services. Public facilities in temporary shelters were limited, including access to clean water, baths and toilets. Access to the affected areas was also difficult because roads were destroyed. Similarly, a study by Hipgrave, Assefa, Winoto and Sukotjo (2012) revealed that lack of clean water and poor hygiene contributed to diarrhoea and other nutrition issues among young children, women and other affected populations living in temporary shelters during the 2006 earthquake in Jogyakarta. Finally, during the 2010 Mount Merapi eruption, a number of pregnant women delivered their babies in temporary centres with limited facilities. Health facilities were also damaged by the eruption and access to MRH services was disrupted (CEDMHA, 2015; Hernanto, 2016). To tackle this issue, the WHO (2015) following the Aceh tsunami event has been working towards a 'Making Hospitals Safer Global Initiative' to make hospitals and health facilities safer from disaster. The initiative aimed to ensure the continuation of health services, including the provision of MRH in emergencies and disasters (WHO, 2015).

- Lack of monitoring and evaluation mechanisms for MRH status

Indonesia's health information system is designed for stable phases. As a result, it is challenging to find reliable information in times of disaster. Seims and Khadduri (2012) conducted a qualitative study in Sub-Saharan Africa and revealed that the performance matrix to measure improvements in sexual and reproductive health and rights was too narrow. The situation appears to be similar in countries such as Indonesia. A recent qualitative-historically-rooted-study using interviews and secondary sources from relevant policies aimed to trace progress towards UHC in Indonesia (Pisani et al., (2017). That study clearly mentioned that the monitoring and evaluation system in Indonesia

appeared to lack reporting mechanisms. The current political environment in the context of decentralisation has resulted in fragmented and unclear procedures for reporting, including the implementation of health information systems in Indonesia. Therefore, efforts to monitor the progress of improvements in the MMR remain challenging.

- Low capacity of health personnel and emergency responders

There is a lack of health personnel deployed during disasters. In the 2016 earthquake in Aceh, it was reported that the affected population faced difficulties in finding health personnel until 2 days after the event (AHACentre, 2016). During the 2009 earthquake in Padang, more than 60% of MRH services took approximately 2 weeks to recover. Contraceptive services diminished by around 20%, and utilities (electricity, water and telephone) were disrupted (Djafri et al., 2015). Lastly, difficulties in accessing MRH services and the low quality of MRH services was reported in a study focused on the 2006 earthquake in Jogyakarta (Hapsari, Nisman, Lusmilasari, Siswishanto, & Matsuo, 2009).

Hesitation to be assigned to rural areas is also a factor that contributes to the unavailability of health personnel during a disaster. Pardosi, Parr and Muhidin (2016) revealed that *bidan desa* (village midwives) and midwifery graduates had low motivation to work in rural areas across Indonesia. During a disaster, midwives and other health personnel may also become victims, resulting in unavailability of MRH services. Data from the 2004 tsunami in Indonesia recorded that around 250 health personnel (including midwives) were dead, and 441 were missing (Carballo, Daita, & Hernandez, 2005). Another study by Pascapurnama et al. (2016) noted that during the 2004 tsunami and 2006 earthquake in Jogyakarta, Indonesia, many health providers were contaminated by tetanus toxoid during health rescue and recovery. This was attributed to a lack of medical equipment during emergency response.

Midwives and other health personnel are the first responders to provide MRH services during a disaster. According to Widayatun and Fatoni (2016), midwives were part of emergency response teams during the first 72 hours in the 2006 earthquake in Bantul Jogyakarta. They were providing general health services as well as MRH services. These

multi-tasks and multi-responsibilities resulted in overburden, and affected the quality of services provided. Moreover, Nuruniyah (2016) reported that during the 2010 Mount Merapi eruption, it was found that health personnel had limited skills and knowledge to respond to MRH needs. This compromised the quality of and patients' satisfaction with the overall health services provided. This highlights that meeting MRH needs during a disaster in Indonesia remains challenging.

Exo-Level: Infrastructure Built During Disasters and Community Engagement

- Inappropriate '*bilik mesra*'

The need for MRH still exists during a disaster. Félix, Branco and Feio (2013) argued that privacy, protection, comfort and safety aspects must be considered, from emergency shelters, temporary shelters and temporary housing to permanent housing during disaster response. Findings from a retrospective qualitative study by Nuruniyah (2016) highlighted the need for a private room (*bilik mesra*) for sexual activity among affected populations. During interview and focus group discussions, it was mentioned by study participants that until 6 months after the Mount Merapi eruption in Indonesia, there was no privacy in the temporary shelters. This resulted in attempted rape and domestic violence, along with psychosocial and mental health problems among affected couples who felt something was 'missing' in their daily lives. Similarly, Fauzi, Iskandar, Resatika and Wahyuningsih (2012) argued that meeting sexual needs among affected people during a disaster is no less important than other needs, such as sanitation and nutrition. They aimed to understand the design of temporary shelters following the Mount Merapi eruption, and strongly suggested including private room for sexual activity along with other basic facilities (e.g. appropriate toilets, bathrooms, drainage and rooms) to prevent unwanted consequences post-disaster, including unwanted pregnancies, sexual violence and STIs. Finally, Fisher (2010) conducted a study on violence against women and natural disasters, and found that during the 2004 tsunami, there were cases of sexual violence in Indonesia and Sri Lanka. Poor temporary shelter design resulted in lack of privacy and security that contributed to sexual violence.

- Strong community engagement during a disaster

During a disaster, local communities help those who are affected. As part of Indonesian culture, *budaya gotong royong* (mutual assistance) is a key practice in the community. Bowen (1986) described *budaya gotong royong* as 'mutual and reciprocal assistance…as part of traditional Javanese culture in Indonesia that symbolises harmonious, smoothly working, self-enclosed among people…motivated by a general ethos of selflessness and concern of the common goal' (pp. 545-546). This *budaya gotong royong* not only exists during normal/stable phases, but also during disaster response. Kusumasari and Alam (2012) studied community approaches during the 2006 earthquake in Jogyakarta, and identified *budaya gotong royong* as part of local wisdom-based disaster recovery model. They noted that *budaya gotong royong* helped the resilience of affected people as they felt that they were not alone in being affected by the disaster. The *budaya gotong royong* manifested as solidarity and tolerance among the affected population. During the earthquake recovery period, the affected population used *budaya gotong royong* to collect money and rebuild houses. Finally, Widayatun and Fatoni (2016) conducted a retrospective qualitative case study to analyse health problems and community participation during the 2006 earthquake in Bantul of Jogyakarta. That study revealed that local communities were involved during the emergency phase; they helped to identify and rescue affected people. They also helped to erect temporary tents, as support from hospitals and district authorities only arrived 3 days after the event.

- Arguing the applicability of 'build back better'

A study in post-tsunami Aceh that aimed to understand the common concept of post-disaster reconstruction 'building back better', especially in the context of post-disaster housing design (Rahmayati, (2016) revealed that housing recipients were not happy with the new houses provided because they were not consistent with their traditional way of life. They mentioned issues related to design, location and materials. Most participants mentioned that the new houses were contrary to the term 'building back better', as the design of their old houses pre-tsunami were much better compared with the new houses. They explained that the houses were smaller, and the public facilities were not complete as they did not have markets, *Meunasah* (small prayer-house) or a public hall for people to gather. Moreover, most participants felt the location of the new houses was on 'high land' and far from the sea, on which the majority relied as fishing was the main livelihood. They understood the intention to relocate them in a safer area, but they

wished the authorities had consulted them about the location so that they could propose another location. Finally, they mentioned that the new houses were built using poor quality materials. They noted the timber used was eaten by termites, which made them unsafe, and were worried that the houses may collapse at any time. Housing recipients also mentioned that they were not involved during the process of designing the new houses. Finally, that study argued that the building back better concept was a term that was good in policy but did not work in practice. The authors suggested that the building back better concept needs to be reframed to consider communal needs, wants of post-disaster survivors and local cultures.

Macro-Level: Political Environment

- Centralisation versus decentralisation

Decentralisation in Indonesia resulted in an entirely new paradigm for service delivery. Das and Luthfi (2017) noted that decentralisation in Indonesia resulted in transferring authority and responsibility from the national to local levels, with each district having its own health system. Pradhan (2006) stated that the new political environment had changed the relationship between clients, service providers and local and central government. Therefore, the progress of improvements in health status was rather slow. Similarly, a qualitative study by Pisani (2017) reported that decentralisation affected the country's goal towards UHC. In the field of DRM, decentralisation has impacted the way the government responds to disasters. Das and Luthfi (2017) argued decentralisation had created an opportunity for local-level authorities to manage disaster risks. For example, in Aceh and Papua, decentralisation reduced conflict and separatist demands. In contrast, Yumarni and Amaratunga (2015) conducted a study to understand local government resource capacity during the Bantul earthquake argued that due to decentralisation, with the low capacity and capabilities of local level authorities, the emergency response was not maximal.

The findings of these two studies suggest that decentralisation and centralisation in Indonesia have influenced the way Indonesia responds to disasters. Decentralisation may work better to reduce tension during man-made disasters/conflicts related to the separatist movement; however, it may not work well during natural disaster events that require capacity, capability and fast response from authorities on the ground.

- Lacking commitments and priorities

MRH issues are not yet a priority during a disaster in Indonesia. Although MRH during a disaster has been reflected in various regulations and guidelines, the translation of these policies into practical action remains debatable. A retrospective qualitative study by Nuruniyah (2016) aimed to understand the provision of reproductive health during the 2010 Mount Merapi eruption. That study revealed that the main focus after the disaster was on shelter and food. As a result, many pregnant women delivered their babies in temporary shelters without proper help from skilled birth attendants. The lack of priority in meeting MRH needs during disasters is influenced by a lower level of commitment. Kusumasari and Alam (2012) studied community approaches during the 2006 earthquake in Jogyakarta and identified that during the preparedness phase, the Indonesian government had a limited budget for maintaining early warning equipment. This resulted in a higher level of casualties when a disaster occurred. They recommended that both national- and local-level authorities maintain sufficient budgets to support disaster programming. Similarly, Butt (2014) mentioned that 'even though the governments are legally required to allocate disaster management funds in their own budgets, not all provinces and districts or cities have been able or willing to do so' (p. 194). This reality results in insufficient infrastructure, including health systems and services, as well as a lack of capacity to prevent, respond to, rehabilitate and recover from a disaster in Indonesia.

1.5. SUMMARY

This chapter reviewed the literature related to MRH, DRM and the integration of MRH into DRM at global, regional and country levels. Three main themes were examined. The first theme focused on key definitions and the application of MRH in disaster settings. The second theme related to DRM and provided an understanding of key concepts related to disaster and risk. Finally, the third theme focused on literature related to the integration of MRH into DRM.

'Maternal health', 'reproductive health', 'sexual and reproductive health' and 'maternal and reproductive health' are used interchangeably at the global, regional and country

levels, depending on the purpose and cultural sensitivity issues. MRH needs increase during disasters, as these situations may place pregnant women at higher risk because of exposure to violence, sudden loss of medical and non-medical support, malnutrition and trauma. These issues contribute to maternal morbidity and mortality cases. Several studies have argued that men and women are not equally affected by natural disasters for this reason, as disasters put pregnant women at risk for increased adverse health outcomes (e.g. unsafe abortions, complications, disabilities and death) (Chan, 2017; UNFPA, 2012c). Meeting MRH needs during a disaster remains a considerable challenge among low and middle-income countries, especially as different countries have different capacities to respond to disasters, including meeting the MRH needs of affected populations. Although a global MISP guideline for reproductive health in crisis situations was developed in 1996, several studies revealed that meeting MRH needs during disasters remains a major challenge.

The MRH status of Indonesia has been in the spotlight since the country failed to meet the MDGs target in 2015. Indonesia has one of the highest MMRs compared with other countries across the Asia Pacific region. Currently, the country is aiming to meet the SDGs target of reducing the MMR to 70/100,000 live births by 2030. Geographical conditions and lack of infrastructure in rural areas, insufficient maternal education, poverty and low income (that cause psychosocial stress), inadequate nutrition, financial difficulties in accessing quality care at modern health services and preference to rely on traditional healers and birth attendants remain major barriers that affect efforts to improve the maternal health status.

Furthermore, the second theme related to DRM explained key concepts related to disaster and risk. DRM includes management of risks across the disaster cycle, which comprises mitigation, preparedness, response and recovery phases. With this definition, it was described how DRM could be used to bridge humanitarian and development phases. It was also highlighted that Indonesia is one of the most disaster-prone countries in the world. As explained in the previous chapter, among 109 countries, Indonesia is ranked 55 for overall risk, 17 for hazard and exposure, 104 for the level of vulnerability and 81 for lack of coping capacity. Following the 2014 Indian Ocean tsunami, Indonesia changed the way it looked at disasters. However, despite efforts to strengthen Indonesia's DRM, Indonesia has not yet been able to adequately translate its policies

into practice. This includes mainstreaming DRM efforts into other sectors during emergency response at provincial and district levels.

Finally, the third theme related to integration described the global notion of integrating the humanitarian and development agendas to meet the 2030 SDGs. The reviewed literature presented and summarised the milestones of integration of MRH into DRM. In the area of MRH and disaster at the global level, the IAWG was formed in 1995 to advance the sexual and reproductive health of people affected by conflict and natural disaster (IAWG, 2018).

At the country level, efforts to meet MRH needs during a disaster were implemented through various measures. Efforts to integrate MRH into DRM were formalised in 2007 after the adoption and inclusion of MISP into the National Technical Guidelines for Health Crisis Response on Disaster from the Ministry of Health of Indonesia. In 2015, the global MISP was adapted for the Indonesian context and developed a local version entitled *Pedoman Pelaksanaan Paket Pelayanan Awal Minimum (PPAM) Kesehatan Reproduksi Pada Krisis Kesehatan* (Indonesia MoH, 2017).

Theoretically, the SEM aims to understand the dynamic between individual and environmental factors. It has four main elements: micro-, meso-, exo- and macro-systems that interlink, inter-relate and inter-depend within a system. This helps to clarify how the surrounding environment shapes human development and influences the attitude of each individual (Moskell & Allred, 2013). This model also helps to understand how the environment contributes to the level of resilience of individuals and communities in responding to disasters (Cretney, 2014; Cutter et al., 2008).

The review of literature related to MRH, DRM and the integration of MRH into DRM, provided evidence that to date, no studies have attempt to understand the extent to which MRH has been integrated into DRM in Indonesia.

Based on this identified gap in the literature and methodology, this study was initiated to understand how Indonesia has integrated MRH into DRM using a socio-ecological lens. The following chapter presents the ontology, epistemology and methodology for this study.

Chapter Four: PHILOSOPHICAL UNDERPINNINGS

Although we all live in the same world, we perceive its reality differently…postpositivism aims to uncover the meaning of reality as understood by an individual or a group. Postpositivism assumes that absolute truth can never be found, that reality does not exist in a vacuum and hence is a creation of the individuals involved in research.

(Sharma, 2010, pp. 701-703)

4.1. INTRODUCTION

The research question addressed in this study was: *How does Indonesia integrate MRH into DRM?* This question aimed to understand the integration of MRH into DRM from the perspectives of pregnant women as health users, community leaders as the general affected population and health staff as health providers and responders, as well as policymakers involved during disaster response in Indonesia. Specific objectives were:

4. To examine the experiences of accessing MRH services in a past disaster;
5. To analyse current DRM practice; and
6. To explore views for a future DRM model.

This chapter is structured according to the research onion diagram by Saunders, Lewis and Thornhill (2009), which reflects the philosophical stance of this research and elaborates on the underlying post-positivism paradigm. This is followed by an explanation of the inductive approach used in this qualitative study to establish a theory. Furthermore, the chapter explains the main methodology, which was a case study approach, using Yin's model (2018). Finally, the chapter defines and elaborates on the diagnostic event that was used as the method to help to answer the research question.

4.2. RESEARCH DESIGN

The research design was informed by the researcher's ontological (nature of reality), epistemological (theory and status of knowledge) and axiological (values driving study) stance (Bellamy, 2011; Holloway & Galvin, 2016). The philosophical stance of this study was post-positivism, in which the truth is seen from more than one angle (Lincoln, Lynham, & Guba, 2011). This study used an inductive approach to establish a new view of the phenomenon under study based on findings from fieldwork. A case study using retrospective single case approach was adopted as the main methodology to answer the research question. This study used a qualitative multi-phased approach to gain an in-depth understanding of the phenomenon's complexity. A diagnostic event approach, as part of mini-ethnography, was chosen to further understand the phenomenon by examining relationships between the past, present and future. The design of this research can be explained by the onion diagram developed by Saunders, Lewis and Thornhill (2009) (Figure 10).

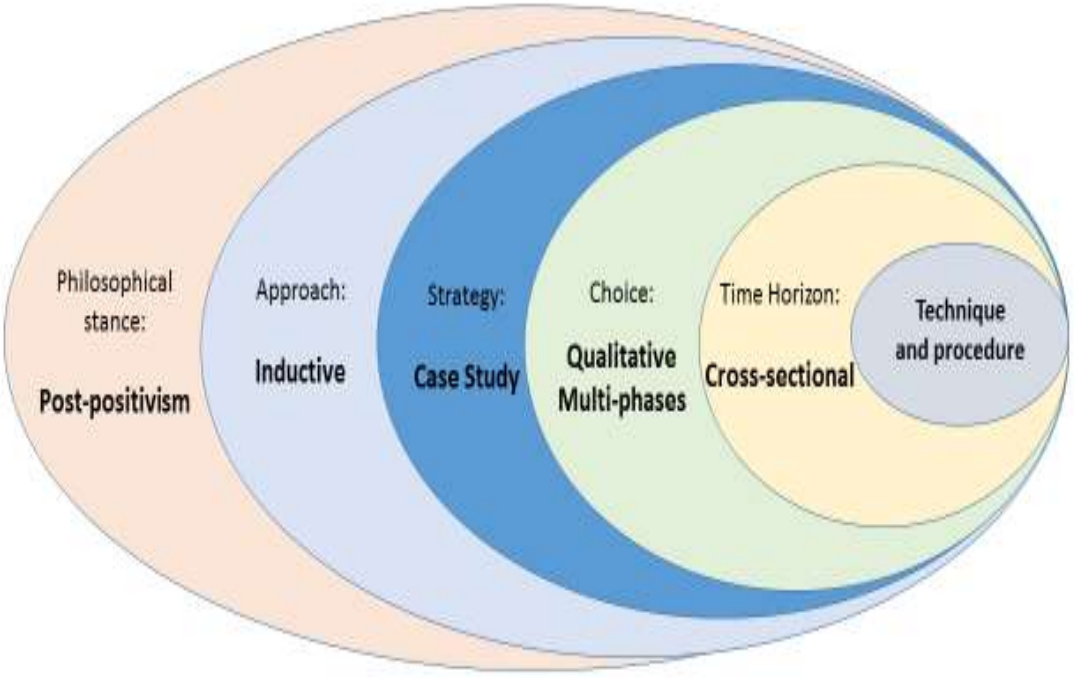

Figure 10: Research design: adapted from the research onion diagram by Saunders, Lewis and Thornhill (2009)

4.2.1. Philosophical Stance: Post Positivism

The philosophical position of this study was based on post-positivism, which sees the truth from more than one perspective and realises the limitation of individuals to fully comprehend the complexity of the phenomenon of concern (Grant & Giddings, 2002; Levers, 2013), because the world is unpredictable (O'Leary, 2005). Samdahl, Hutchinson and Jacobson (1999) and Henderson (2011) argued that post-positivism 'utilises qualitative information with a belief in the importance of subjective reality, but does not abandon tenets of conventional positivism' (Henderson, 2011, p. 342). Post-positivism is understood as a paradigm that can move positivism from a narrow view to a more encompassing way of understanding real-world problems. Furthermore, Ryan (2006) stated that post-positivism allows the development of new knowledge and emphasises meaning. The use of post-positivism as an epistemological base for this research helped the researcher understand the reality from new perspectives, particularly from the perspectives of the community who accessed MRH services during disasters. This is consistent with Alcof (2010), who argued that post-positivism accounted for experiences and voices to help achieve a different understanding of a phenomenon. Finally, Henderson (2011) stated that post-positivism provided an avenue for people to uncover new meanings through multiple interpretations of reality.

As discussed in Chapter Three, various Indonesian statistics concerning disaster management and health are available, but in-depth explanations and records of community perspectives and experiences are limited. Although a well-designed quantitative study with a representative sample may provide essential statistical findings, it does not necessarily offer an in-depth understanding of a phenomenon's complexity (i.e. information that allows analyses related to past, present and future events) (Ryan, 2006). Unless a contextualised approach is used in generating knowledge and interpreting information, the resulting understanding of the process of integration of MRH into DRM during crises or disasters in Indonesia is limited. Therefore this research adopted a post-positivist qualitative approach, using a series of logical steps/stages that involved multiple perspectives from participants rather than relying on singular interpretations of reality (J.W. Creswell, 2013).

4.2.2. Inductive Approach

This study used an inductive approach, which aims to establish a new view of a phenomenon based on findings from fieldwork. Saunder et al. (2009) defined an inductive approach as a process that moves from a research question to qualitative data collection, analysis and then finally an established theory. During this study, fieldwork was undertaken to determine the lenses of the integration process (Beiske, 2002; Thornhill, Saunders, & Lewis, 2009). Data were gathered and analysed from relevant documents and policies, focus groups and individual interviews. The use of multiple data sources and different participant groups enhanced the rigour of this study, including the credibility, value and believability of the findings. During the concurrent data collection and analysis, an inductive approach for analysing the data was conducted systematically using thematic analysis. This helped to establish links between the findings, the objectives of this case study, and the research question. This approach was consistent with the argument put forward by Thomas (2006), which recognised the importance of an inductive approach in helping to generate new theories and gain a better understanding of a phenomenon from a different view.

Furthermore, the decision to choose an inductive approach for this case study (Yin, (2018) helped to increase understanding about the 'case' of this case study, the 'boundaries' and 'the unit of analysis', through the process of condensing raw data into a brief summary. Thomas (2006) argued that in using an inductive approach, the products or frameworks are targeted and reliable. Finally, as part of the study design, this inductive approach facilitated the translation of data into valuable information, answered the objectives and research question and moved towards developing a conceptual framework for the integration of MRH into DRM in Indonesia.

4.2.3. Strategy: Case Study

A case study approach was used as the main strategy to answer the research question. Harrison, Birks, Franklin, and Mills (2017) stated that 'the goal of a post-positivist researcher is to use science as a way to apprehend the nature of reality while

understanding that all measurement is imperfect' (p. 9). A case study is a form of empirical inquiry that is commonly associated with qualitative methods (J.W. Creswell, 2013; Denzin & Lincoln, 2011; Merriam, 2009; Stake, 2006). Among the case study theories, Yin's model was chosen because of its post-positivism stance. Other theories, such as Stake's case study model, suit relativist and constructivist/interpretivist approaches, whereas Merriam's case study model suits pragmatic constructivism as epistemological commitments (Mills et al., 2017; Yazan, 2015). Although the models of conducting case study research described by Stake and Miriam are more 'flexible', Yin's case study model is designed to have a 'logical sequence' (Yazan, 2015, p. 149).

The choice of Yin's model for conducting case study research influenced the architecture of this research. Following Yin's steps (2018), the three essential elements in designing a case study are described below.

a. **Defining the case.** A case is 'a contemporary phenomenon within its real-life context, especially when the boundaries between a phenomenon and context are not clear, and the researcher has little control over the phenomenon and context' (Yin, 2018, p. 15). In this case study research, the case was the integration process of MRH into DRM in Indonesia.
b. **Type of case study design.** The type of this case study design was an embedded single case study using the 2013 eruption of Mount Sinabung. In this single case study, the provision of MRH services during the emergency response was evaluated. The eruption event represented a common disaster in Indonesia. This means the findings and analysis may be used and generalised (Yin, 2011) to understand the integration process of MRH into DRM in Indonesia.
c. **Using theory in design work.** The theoretical proposition (Yin, 2018) used in this case study was 'better preparedness for better responses'. A logical SEM (Bronfenbrenner, 1994) was used to enable this case study to understand the process of integration by measuring the level of preparedness that led to responses during the discussion of findings.

To understand the integration of MRH into DRM in Indonesia, this study used the case of the 2013 eruption of Mount Sinabung. The phenomenon of integration of MRH into DRM in Indonesia as the focus of this study (J.W. Creswell, 1994, 2013) was deemed to

be better understood by learning from the implementation of DRM policy during a disaster event in the real-world setting (Yin, 2014, p. 16) of a selected case of an eruption event in Indonesia.

Yin's (2018) definition and stages of the case study were used for this research, as they focused on the scope, process and empirical nature of the inquiry. This offered 'a way to apprehend the nature of reality while understanding that all measurement is imperfect' (Mills et al., 2017, p. 10). Grynszpan, Murray and Llosa (2011) argued that a case study can be useful in the area of DRM, particularly for learning lessons from emergency situations. They discussed how a case study application within DRM can provide an in-depth understanding of a phenomenon or an event. Similarly, Simons (2009) stated that the application of case study helps to understand a specific topic, programme, policy or system, which allows generation of knowledge to inform policy development, civil/community action and professional practice. The application of an embedded single case study can help to understand the phenomenon from different units of analyses. In this research, the voices of health service users, health service providers and policymakers helped to provide comprehensive information to evaluate the progress of integration.

4.2.4. Application of Diagnostic Event in this Case Study Research

Various methods were used in this study to help ensure the study's quality (e.g. triangulating the findings) (Yin, 2018). Using multiple methods during data collection and analysis was 'mutually informative' (Luck et al., 2006, p. 108) and provided 'a more synergistic and comprehensive view of the issue being studied' (Mills et al., 2017, p. 13). Therefore, mini-ethnography using a diagnostic event approach was chosen to help understand the phenomenon by considering socio-cultural aspects (Simons, 2009). This approach aimed to understand tensions and dynamics, and examine relationships between the past, present and future (Moore, 1987), which helped to clarify the relationships between the event and the process (Scheffer, 2007).

Furthermore, the words 'diagnostic' and 'event' are closely related to and commonly used in the fields of health (including MRH) and DRM. The following are perspectives of the terms diagnostic and event according to academics and professionals.

The term diagnostic is used to identify particular illnesses as well as to determine pregnancy status using a combination of signs and symptoms. From a medical perspective, Helman (1985) stated that 'diagnostic' should imply elements of communication to gain insight into individual experiences and enhance relationships among medical practitioners and patients, including those between midwives and pregnant women. From a medical sociology view, Brown (1990), as cited in Jutel (2009), emphasised a broader definition of diagnosis, which was not limited to a 'classification tool of medicine', but also provided 'a cultural expression of what society is prepared to accept as normal and what it feels to be treated…which shapes knowledge and practices' (p. 279). Based on the above explanation, it is argued that a diagnosis is determined by signs and symptoms; it is a combination of objectivity and subjectivity. According to the SEM, the objective and subjective elements of 'diagnostic' are defined by internal and external factors (Dar, Buckley, Rokadiya, Huda, & Abrahams, 2014; Sallis, Owen, & Fisher, 2008). Signs refer to objective aspects that other people, including experts, can easily identify. In contrast, symptoms refer to aspects subjectively experienced by the affected individual.

In DRM, the term 'event' is used interchangeably with 'onset of disaster'. Figure 11 shows how the event represents a disaster within a disaster management cycle.

Figure 11: Event within a disaster cycle (source: UNISDR adopted from Alexander, 2002)

Both academics and practitioners in disaster management use 'event' to explain a disaster. Academics (e.g. Jamieson, (2016, p. 400), use event to explain natural hazards as 'a discrete natural event that kills people and/or causes economic loss'. Furthermore, Platt, Brown and Hughes (2016) used pre-event, event and post-event to describe disaster stages. Lastly, Gou and Li (2016) used event to relate history, mechanism and coping strategies to analyse seismic risk and earthquake patterns.

Similarly, the disaster cycle model, as explained in Chapter Three, uses the term event to explain the onset of a disaster. According to DRR terminology, an event is described as 'the concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events' (UNISDR, 2009, pp. 10-11). Furthermore, the WHO (2008) used 'event' in its International Health Regulations to explain 'a manifestation of a disease or an occurrence that creates a

potential for disease', whereas 'disease' was defined as 'an illness or medical condition that presents or could present significant harm to humans, irrespective of origin or source' (WHO, 2008, p. 11). Finally, governments, United Nations agencies such as UNFPA (2012a), UNICEF (2005), non-governmental organisations and other practitioner bodies refer to an 'event' as the onset of a disaster.

Diagnostic Event

As discussed earlier, the diagnostic event concept was chosen to help understand the phenomenon under study by looking at relationships between the past, present and future to understand the tensions and dynamics (Moore, 1987), and clarify the relationships between the event and the process (Scheffer, 2007). Furthermore, as part of mini-ethnography, the diagnostic event approach builds understanding the phenomenon from socio-cultural perspectives (Simons, 2009).

In this case study, the application of diagnostic event was seen as an appropriate way to help answer the research question because it examined the elements of time, events and processes, which facilitated analysis related to past, present and future events. Drawing on the voices of people that illuminated experiences and perceptions helped the researcher to gain an in-depth understanding of the process of integration of MRH into DRM in Indonesia.

In a contemporary way, processual ethnography is used to analyse relationships between policies, systems and individual choices via an institutional analysis and development framework (Donahoe, 2009). It can also assess how people in certain positions adapt to physical and social environments through ecological hazards (Vayda, McCay, & Eghenter, 1991). Additionally, it analyses the 'action arena' by understanding the changes in systems and human actions within society through a diagnostic event approach (Moore, 1987).

A diagnostic event is also a key approach in the field of global health. Benton (2015) used a diagnostic event approach in a recent study to better describe the HIV situation in Sierra Leone. As part of the diagnostic site, she used a human story as the centre and point of departure to analyse political, economic and other root causes that influenced the HIV/AIDS phenomenon in that country.

Finally, Glaeser (2005) argued that the diagnostic event approach allows a researcher to discover and analyse relationships between ongoing conflicts, dynamic social processes and competing disclosures. The appropriateness of using the diagnostic event approach depends on the research question and how a study is designed. In this case study research, the application of the diagnostic event approach helped to answer the research question by allowing the researcher to analyse the time, events, and processes as described in participants' voices.

4.3. SUMMARY

This chapter explained the philosophical notions that guided this study. The philosophical position of this study was based on post-positivism to allow the researcher to see reality from a different angle, particularly to understand how Indonesia integrates MRH into DRM. This research used an inductive approach to obtain a different understanding of the phenomenon under study based on findings from fieldwork.

As part of the post-positivist paradigm, a qualitative research approach was used to understand the 'how' and 'why' behind the statistics related to disaster management and health that are available in Indonesia. Unless a contextualised approach is used in generating knowledge and interpreting information, the resulting understanding of the process of integration of MRH into DRM during times of crisis or disaster in Indonesia would be limited. Therefore, this research endeavoured to explore this topic from multiple perspectives and include multiple voices from diverse participants, rather than defaulting to a singular explanation of reality.

The use of a case study as a form of empirical inquiry was also explained in this chapter. Different types of case study approaches were examined and the use of Yin's case study model was justified. The application of a qualitative retrospective single case to study the phenomenon of integration was described. The chapter concluded with an explanation of the diagnostic event approach that was used to help understand tensions and dynamics, and examine relationships between the past, present and future (Moore, 1987); this helped to clarify the relationships between the event and the process.

The following chapter explains how this case study was executed using Yin's model, which consists of five stages: design, prepare, collect, analyse and share/report. Key activities executed in each stage and ethical considerations are also explained.

Chapter Five: The Case Study Design

5.1. INTRODUCTION

This chapter explains the five stages used in this case study design. These stages are: 1) design, 2) prepare, 3) collect, 4) analyse and 5) share/report. Key activities executed in each stage are also outlined, including an explanation of the case study site, boundaries, data collection and analysis processes and the presentation of the findings. The chapter then outlines the strategies and approaches used to ensure rigour and establish the believability, value, data stability, generalisation, neutrality and accuracy of the study.

The chapter concludes with an explanation of the ethical considerations relevant to this qualitative retrospective single case study, including the principles of partnership and interaction, protection and participation. Finally, the chapter offers a brief explanation of how the findings are presented.

5.2. CASE STUDY STAGES

This case study was designed based on Yin's model (2018), which has five stages (design, prepare, collect, analyse and share/report). Figure 12 shows the stages of this case study research.

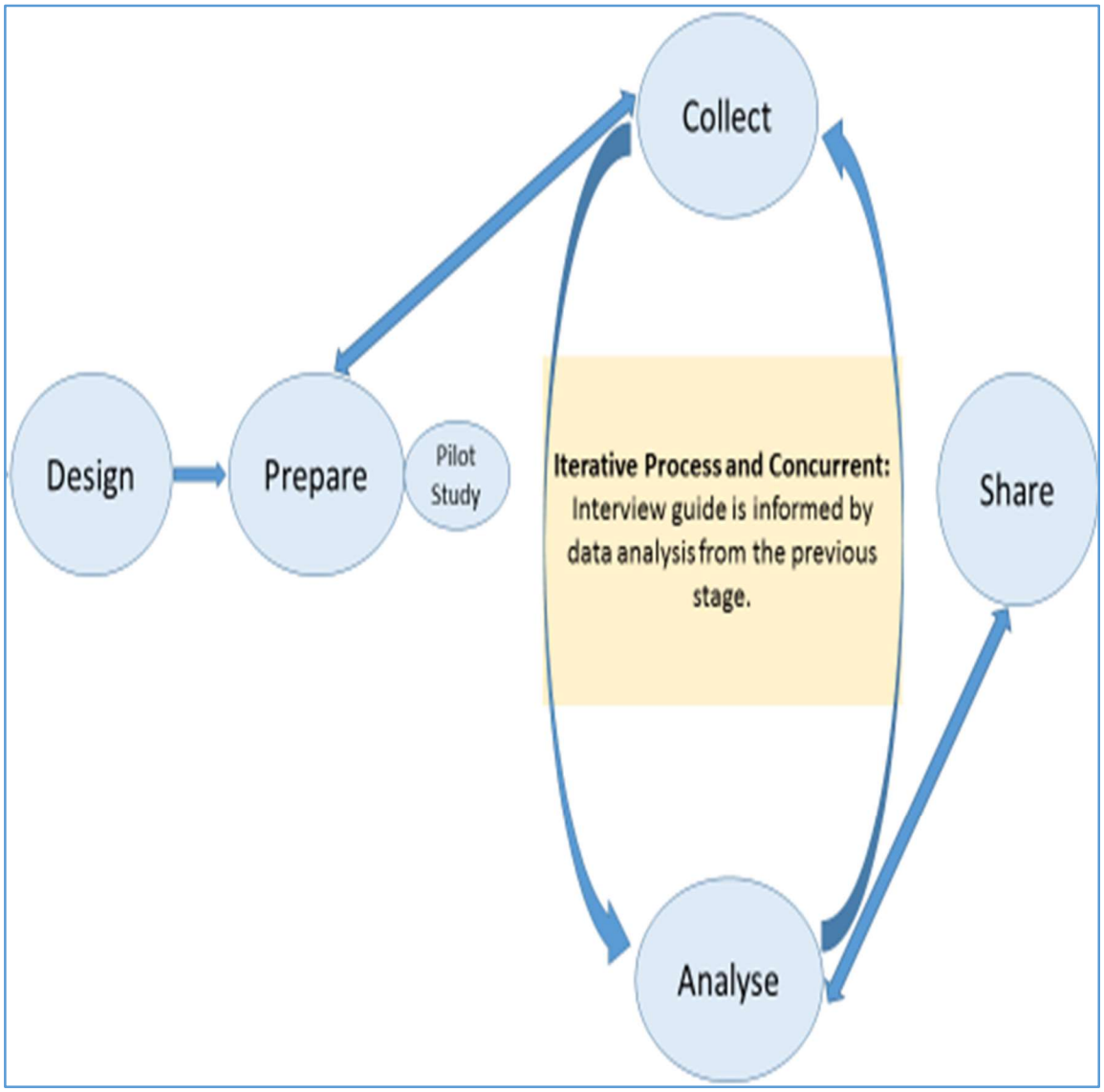

Figure 12: Stages of this study, adopted from Yin's model (2018)

Stage 1: Design

A. Study Site

This case study used a single site within the area affected by the 2013 eruption of Mount Sinabung. The study was conducted in the newly relocated villages of Bekeurah and Simacem which are in Siosar KabanJahe, Karo district of the North Sumatera province. This area is located around 17 kilometres from KabanJahe, which is the capital of Karo district. According to *2017-2022 Rencana Pembangunan Jangka Menengah Desa Bekeurah* [2017-2022 Bekeurah village medium term development plan], the total population in Bekeurah village was 340 people [173 males and 167 females]. Among these women, a total of 35 women are of reproductive age. The majority of the

population are farmers while four people are government personnel. A total of 338 people identified themselves as Karonese [local people] and two of them idenfitied themselves from diferent ethnicity [i.e.: Javanese] (Pemerintah Desa Bekeurah, 2017). Furthermore, according to *2017-2022 Rencana Pembangunan Jangka Menengah Desa Simacem* [2017-2022 Simacem village medium term development plan], the total population in Simacem village was 458 people [252 males and 206 females]. Among these women, a total of 43 women are of reproductive age. The majority of the population are farmers, two people are business men, and six people are government personnel. All people in this village identified themselves as Karonese [local people] (Pemerintah Desa Simacem, 2017).

Mount Sinabung is located in Karo District, which lies under the territory of North Sumatera Province. Karo District has 17 sub-districts, and a total population of 382,622 people (BPS, 2014). More than 50% of the population are Christian, over 20% are Muslim and around 20% are Catholic; the remainder are Buddhist, Hindu and other religions. After being dormant for centuries, Mount Sinabung became active in August and September 2010 with an increase in tectonic tremors and volcanic movements. A massive eruption occurred in November 2013. This eruption killed 15 people and displaced more than 20,000 people, including around 5,000 women of reproductive age. Although the main affected sub-districts were Payung and Naman Teran, which are predominantly Christian, the impact of the eruption affected around 33 villages occupied by predominantly Muslim populations.

The eruption continued until 1 January 2014, when another massive explosion occurred and displaced an additional 30,000 people, two of whom were reported missing. These eruptions destroyed livelihoods, agriculture and other necessary infrastructure, including 22 primary health facilities. The displaced persons were sheltered in more than 40 temporary centres (UNOCHA, 2014b). While some babies were delivered in temporary shelters, other pregnant women could not access antenatal and postnatal care immediately after the eruption events. Health personnel arrived later, and provided basic healthcare (including MRH services) to the affected population (Yakkum, 2014).

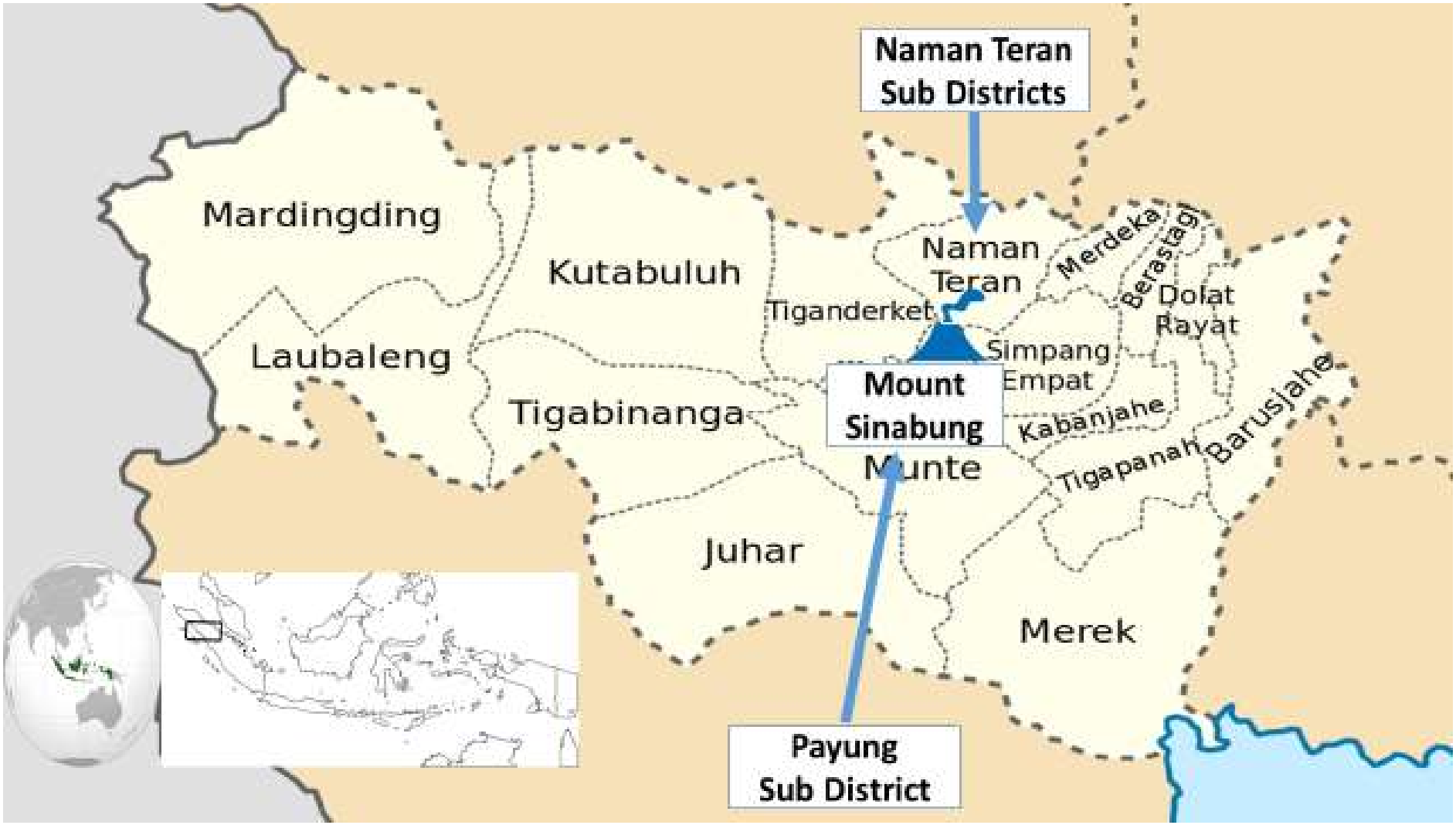

Figure 13: Location of the case study: Mount Sinabung (source: https://www.karokab.go.id/id/profil/peta-daerah)

The eruptions caused direct and indirect health problems such as injury, communicable diseases (e.g. respiratory infections and diarrhoea, conjunctivitis) and mental health problems, particularly among those who lived in temporary shelters (PEMDA, n.d.; Yakkum, 2014). In mid-2016, the BNPB (national disaster management authority) relocated around 2,000 households from the temporary shelters, although many others insisted on returning to their land. Small-scale eruptions continued, creating uncertain conditions that forced more than 7,000 people, including around 1,800 women of reproductive age, to remain in eight temporary shelters (PEMDA, n.d.).

Figure 14 summarises the events according to time and processes.

Figure 14: Processes and events in the eruptions of Mount Sinabung (source: BNPB Indonesia)

The 2013 eruption of Mount Sinabung resulted in a Memorandum of Understanding between the Ministry of Health and BNPB that was signed in 2014. This agreement focused on the allocation of funds to support the provision of emergency health response to people affected by the event (Indonesia MoH, 2014). As a result, the President of the Republic of Indonesia instructed the BNPB to conduct field studies to evaluate the existing laws, guidelines and policies related to disaster management (UNOCHA, 2014a). Given that Mount Sinabung remains under active status, the local authority has created a database to track the eruption activities around the Sinabung area (PEMDA, n.d.).

B. Case Study Design and Units of Analysis

This research was designed using an embedded single case study via multiple units of analysis (Yin, 2018). The single case chosen was the 2013 eruption of Mount Sinabung, because it was considered to represent a typical event in Indonesia. The 2013 eruption was used as a representative phenomenon or typical case (Yin, 2012) to understand the provision of MRH services during a natural disaster in Indonesia. This event was selected as the boundary of time and site/place for this case study, with the process of integration of MRH into DRM used as the unit of analysis (Yin, 2014). The below table shows the units of analysis, which involved: i) individuals, ii) communities and iii) policymakers. These stakeholders helped gain an in-depth understanding of integration as a key phenomenon of this study.

Unit of Analysis	Representation of:
Women who were pregnant during the eruption	Users of MRH services
Community leaders	Affected communities
Health personnel including midwives	Providers of MRH services
Government and non-government staff in KabanJahe, Medan and Jakarta	Policymakers

Table 3: Units of analysis and representation

Throughout this case study process (Yin, 2018), inputs that contributed before the 2013 events, outputs of the massive eruption and the outcome of the events were all diagnosed (Moore, 1987). The research question was answered through voices of pregnant women, community leaders, health personnel and policymakers who had

experienced the 2013 event and provided their perspectives of current and future MRH and DRM.

Stage 2: Preparation

A. 'Desired Skills' for the Case Study Investigator

The preparation of this case study involved obtaining 'desired skills' (Yin, 2009, p. 67) by equipping the researcher with soft skills, including attending relevant workshops involving interview skills, and participating in various studies conducted by other PhD students that aimed to build and enhance skills in asking good questions, listening, being adaptive and flexible and academic writing, as well as other aspects of personal development.

During this preparatory stage, consultations with key and potential stakeholders in Indonesia continued. The main purpose was to gain access while undertaking fieldwork and ensure that the study was designed in accordance with the real situation on the ground.

B. Consultations: Gaining Access

The fieldwork started with the process of *tradisi ketuk pintu* or 'knocking on the door tradition' through a series of consultations with relevant authorities at the national and sub-national levels. An example email sent to one of stakeholders in Indonesia in Appendix B. This consultation with authorities was essential to inform the researcher, obtain advice and access, and ensure that the study was conducted according to ethical principles. Several studies conducted in Indonesia, including those conducted by Nuruniyah (2016) and Titaley, Hunter, Dibley and Heywood (2010), started consultation processes with village elders to gain access to the target communities in villages. These were qualitative studies that investigated MRH, particularly perceptions of traditional birth attendants and *bidan desa* (village midwives). The importance of consulting and communicating about the research with the village elders and local leaders is not only the recommended practice in Indonesia, but also in other countries, including New Zealand. According to Walker, Eketone and Gibbs (2006), *Kaupapa Maori* is important to ensure research is conducted with respect to the that culture's values and systems. Furthermore, it ensures the recognition of *tino rangatira-tanga,* which relates to

'sovereignty, autonomy, governance, independence and self-determination' (p. 333). This highlights the importance of adhering to and respecting local cultural mores to gain access before conducting research in different parts of the world.

Consultations with stakeholders at the national level in Jakarta were conducted from August to December 2017. The researcher conducted two face-to-face consultation meetings with key personnel from the Ministry of Health, as well as one consultation meeting with key personnel from the BNPB. In addition, the researcher developed a poster and a one-page document summarising the research study, including a short description of the background, aim, objectives, pilot and actual study, as well as the significance of the research. These documents were shared with the authorities, and posted on notice boards in the Ministry of Health and BNPB offices.

At the provincial level, the researcher met with the Provincial Health Authority in August and December 2017 and with the Provincial Disaster Management Authority in December 2017. At the district level, the researcher also held a series of consultations with district health and disaster management authorities in December 2017. The poster and summary of the study were given to the authorities and posted on the notice boards of their offices.

At the local (Sinabung) level, the researcher started face-to-face consultations in August 2017. The first meeting (August 2017) was conducted with community leaders. This meeting was held at the office of the Head of Sukameriah-Siosar Village. Between August and December 2017, the (female) research assistant had two contacts with the head of villages to ensure communication and awareness about the study and prepare for the stakeholder consultation in December. Three printed posters about the study were given to the heads of the villages, and four posters were posted on the village notice boards.

In December 2017, further consultation was held at the *jambur* (community hall) of Sukameriah-Siosar Village. On that occasion, 23 stakeholders from the three villages (i.e. Bekerah, Sukameriah and Simacem villages) that were relocated in the relocation area of Siosar attended the consultation session. Stakeholders were the village heads, members of women's groups, religious leaders and community leaders. The researcher and research assistant were welcomed by the heads of the three villages and given

opportunity to offer an introduction and explain the study. In addition, the researcher and the research assistant were told about the local customs and expectations of the researchers when in the area. The information posters were distributed to the 23 stakeholders that attended the consultation session. In that consultation, it was decided that Sukameriah village would be the location for the pilot study and the other two villages (Bekeurah and Simacem) would be the locations for the actual study. In that consultation session, the researcher mentioned that he was staying in the communities and would be based at the house of one member of the local community during the fieldwork.

C. Development of the Study Protocol

A case study protocol was created to ensure there were definitive steps to be taken, clear boundaries, units of analysis and a complete research outline (Yin, 2009, pp. 79-81) This study protocol enhanced the reliability of the study (Yin, 2018) because it specified procedures to structure and govern the case study research. The case study protocol outlined key activities throughout the execution of the study and their reasons. The protocol developed for this case study research along with research safety protocol are presented as Appendix A and Appendix G.

The protocol was developed based on the stages of this case study and Yin model (2018), which emphasises having a protocol to guide the execution of a case study. This protocol enhanced the accuracy and neutrality that ensured confirmability, as well as the stability of data that ensured dependability. The protocol guided the researcher to use a clear process during the execution of this case study and document each step of the key activities throughout this research. Similarly, Sekaran and Bougie (2016) suggested that having a research protocol 'allows for repeatability in method and contributes greatly to the validity and generalisability of the research's results'. Lastly, the case study protocol was translated into a work plan that aided the timely execution of this research.

D. Expert Opinion

An expert opinion exercise was undertaken during the preparation stage for this case study. This aimed to ensure that the indicative questions were acceptable, consistent with local culture and easily understood without undermining the purpose. Although Gable (1986) and Lynn (1986), as cited in Slocumb and Cole (1991), suggested there

should be at least 10–20 experts, there is no consensus on the number of experts needed to validate an instrument (Slocumb & Cole, 1991, p. 194), especially in a clinical study. Given that the primary researcher was stationed in Auckland during the preparatory work for this study and the availability of Indonesian MRH and DRM experts was limited, this study used four Indonesian experts. These four experts had academic and/or practitioner backgrounds, and agreed to review the indicative questions and the demographic data collection sheet. An example of letter to one of the experts is presented as Appendix H. Schriesheim, Powers, Scandura, Gardiner and Lankau (1993) considered content validity (i.e. expert opinion) as the essential first step in the construct validation process, and encouraged this to be conducted before actual data collection. Hinkin and Tracey (1999) recommended content validation as a way to ensure the quality and rigour of a study. Input and feedback from the four experts from Indonesia were used as a reference to improve the interview guide.

E. Pre-Understanding Interview

Yin (2018) emphasised the importance of the preparatory stage in ensuring the quality of a case study, particularly in ensuring rigour, aspects of neutrality (as part of confirmability) and believability (as part of credibility). The pre-understanding approach was also recommended by Björkman and Sundgren (2005) for use when conducting research using a case study approach. Therefore, this research used a pre-understanding interview approach as part of the preparatory stage. The pre-understanding interview was conducted with the researcher's supervisors, and was considered an opportunity to gain experience and better equip the researcher with the skills needed to conduct a case study (including practising conducting an interview) before moving into the fieldwork. Although undertaking a pre-understanding interview was originally part of a phenomenological approach (Heinonen, 2015), the main purpose of undertaking this process in this case study was to ensure interview techniques were used that were consistent with ethics and principles of conducting qualitative research. The semi-structured interview questions were back-translated and checked for accuracy. The process included listening, recording, probing and other soft skills. Furthermore, after obtaining permission to conduct a study in Indonesia from the relevant authorities, another pre-understanding interview was conducted with the field supervisor. The purpose of this interview was to ensure that the language and questions were consistent with both the research question and the local context.

F. Recruitment of a Field Supervisor and a Female Research Assistant

The Government of Indonesia has a regulation related to conducting research in Indonesia; Decree No.41/2006 recommends 'foreign researchers (i.e. foreign universities, research institute, enterprise, and foreign nationals) who will conduct any research in Indonesia to involve scientist from local counterpart—from local university, research institute, or non-government organisations who has competency in the research topic' (C. i. C. Indonesia, n/a, p. 1). The above Decree does not specify any condition for any Indonesian studying in a foreign university who would like to conduct fieldwork in Indonesia. The literature review revealed that there was no clear regulation for self-funded Indonesian students studying abroad in a foreign university and conducting field research inside Indonesia territory. However, during the preparation stage of this case study, a field supervisor was assigned for the following reasons.

- The study included fieldwork in Indonesia, and it was necessary for the primary researcher to have a person in the field to supervise his work.
- The field supervisor helped in obtaining local ethics approval from relevant bodies in Indonesia.
- The field supervisor guided and advised the primary researcher while carrying out the study in the local context.
- The field supervisor provided review, feedback and comments on data findings and during data analysis from an Indonesian perspective.

Having a field supervisor while conducting the fieldwork in Indonesia was recommended by Tolich, Tumilty, Choe, Hohmann-Marriott and Fahey (2019), who argued that field supervision was important as it helps facilitate the student's learning during fieldwork.

Moreover, before data collection and analysis commenced, a female research assistant was recruited for the following reasons.

- As a male researcher conducting a study on MRH, having a female research assistant to accompany him during the interview adhered to moral and ethical considerations (Doherty & Purtilo, 2015) by respecting the comfort of female participants. It was also another way of establishing rapport and building trust, as well as considering sensitivity (Liamputtong, 2006). Davies and Dodd (2002) highlighted the importance of having women interviewing women to accurately

convey ‘the female voice’. Furthermore, Liamputtong (2006) acknowledged the importance of finding a strategy to address gender differences between the researcher and the researched.

- Cultural issues: It is considered culturally appropriate, particularly in Indonesian culture and in the wider Asian context, to have a woman talk with other women. Helman (1985) noted that understanding the socio-cultural background enhanced the communication process.
- Geographical location: Given that the 2013 eruption of Mount Sinabung predominantly affected Muslim villages (UNOCHA, 2014b), having someone from the same religion was crucial for communicative success. The primary researcher is a non-Muslim; therefore, having a female research assistant that was Muslim helped promote access to participants. In addition, when transcribing interviews, the research assistant helped in explaining the meaning of some of the terminology used in Islam.

A job-description for the female research assistant was developed and advertised on a notice board at the School of Public Health, North Sumatera University. Two candidates were tested for their ability to use Microsoft Word and Excel and interviewed during the selection process. As part of rigour and ethical considerations, the selection was made to ensure there were no conflicts of interest and no personal links to the area and what the implications of this might be. The research assistant was selected and engaged in August 2017. The job description and confidentiality sheet signed by the female research assistant in Appendices I and J.

G. Training for the Female Research Assistant

The research assistant was oriented on the purpose of the study and trained on how to assist in data collection, including familiarity with the interview guide, inclusion and exclusion criteria, data collection phases and methods of conducting focus group and individual interview sessions. The criteria for selection of the research assistant were: a female midwife with a master’s degree in public health, computer literate, from North Sumatera province and experienced in conducting (qualitative) research.

H. Pilot Study

Before the actual data collection, a pilot study was conducted in December 2017. Yin (2018) recommended conducting pilot exercises to help refine the content, timing, any ambiguity and procedure for data collection. It also helped to understand the logistics that were already available and what would be needed during data collection (Yin, 2009, pp. 92-94).

1. Location of the Pilot Study

The main purpose of the pilot study was to clarify the sampling strategy and the three phases of data collection, and discover issues from the field (including logistics, cultural sensitivity and timing). During the pilot study, participants were selected using similar exclusion and inclusion criteria as those used for the actual study.

The pilot site for this research was one of the relocated villages, namely Sukameriah-Siosar village. This village has around 135 households with a total population over 400 people, according to 2016 population data. Of these, more than 50 were women of reproductive age. Sukameriah village had been affected by the eruption of Mount Sinabung since 2010 (Yakkum, 2014). It was relocated to a new area (Siosar) by the Government after the original village was buried under ash and stones from the series of Mount Sinabung eruptions from 2013 to 2014. The villagers lost their houses and farms, and had been living in temporary shelters for more than 2 years before their relocation to Siosar. Sukameriah-Siosar village was an ideal for the pilot study because it has similar characteristics to the site for the actual study.

2. Process of the Pilot Study

The pilot study was conducted according to the design of the case study. It started with testing the draft poster through advertisements, testing the information sheet through recruitment and testing the indicative questions and demographic data sheet through focus group discussions and individual interviews.

Testing the draft poster through advertisements

After consulting with community leaders and communicating the study's aim, objectives, work plan and team to the communities through the consultation session, the study was advertised through posters that were re-posted (in August and December 2017) on the community notice boards, clinics, *jamburs* and village offices. The poster was printed in colour to make it more eye-catching. An example poster is presented in Appendix L.

The researcher and the female research assistant asked for feedback from the communities, midwives and village leaders as to whether the poster was simple and easy to understand. A total of 11 women and 12 men were contacted to ask whether they understood on the content of the poster. All of these individuals stated that they understood the purpose of the poster. As the response was positive, there were no changes to the initial draft of the poster.

In Medan and Jakarta, the researcher contacted health and disaster management authorities and asked their opinion about the poster and one-page document. These stakeholders did not have any further suggestions as they thought the draft was clear. They indicated that using the poster to recruit policymakers may not be the best strategy because potential candidates were policymakers who were busy people and might not have time to look at notice boards; even if they saw the advertisement, they would be unlikely to proactively contact the researcher. They proposed that the researcher use the snowballing method to recruit policymakers.

Testing the information sheet through recruitment

In Sinabung, the researcher received four phone calls (one from a midwife, two from community leaders and one from a woman) using the number provided. No emails were received, but five women physically approached the researcher to ask for more information about the research after seeing the posters on the community board. The information sheet was printed and kept by the female research assistant. After receiving phone calls from the interested candidates, the researcher reviewed their eligibility against the inclusion/exclusion criteria and requested the research assistant to send the information sheets to the selected candidates in November 2017. Some participants

received the information sheet in December after they saw and discussed the research in person with the researcher.

For policymaker candidates in Medan and Jakarta, the information sheet was sent out directly to candidates using a dedicated email address and telephone number. This email address and mobile number were created by the researcher for use during communications with candidates and research participants.

The researcher and the research assistant asked for participants' feedback about the content and structure of the information sheet. However, no changes to the initial draft of the information sheet were required.

Testing the indicative questions, draft informed consent form and draft demographic sheet through focus group discussions (FGDs) and individual interviews

The interview sessions for the pilot study were conducted using FGDs and individual interviews. The main purpose of these sessions was to test the indicative questions and review the informed consent form and draft demographic sheet. Three FGDs and five individual interviews were conducted during the pilot study. Participants in the three FGDs were:

1. Women (one FGD);
2. Community leaders (one FGD); and
3. Health personnel (one FGD).

Some FGD participants were selected for individual interviews using specific criteria:

- Those who shared significant information;
- Those who were not able to explain or elaborate issues/information due to time constraints; and
- Those who were not able to speak during FGDs.

Five interviews were conducted:

1. One with a woman;
2. One with community leader;
3. One with a health service provider;

4. One with a policymaker in Medan; and
5. One with a policymaker in Jakarta.

FGDs and individual interviews with women, community leaders and health personnel

The FGDs and individual interviews with women who were pregnant during the 2013 event were conducted by both the female research assistant and the researcher. Participants were given the opportunity to choose whether they would like to be interviewed by a male or a female. They were also asked whether they felt comfortable having a male researcher present. None of the participants had objections to the male researcher being present or to being interviewed by him.

The second FGD was conducted with three midwives representing health personnel, one of whom was selected for an individual interview. This group was also given the opportunity to tell the researcher if they had any objection being interviewed by or having a male researcher present during the process. None of the participants had objections.

The final FGD session was conducted with community leaders. Four people had expressed an interest in joining the interview; however, only three participants showed up at the time of FGD. One of these community leaders was chosen for an individual interview.

The FGDs with women and community leaders were conducted at night because local people go to *ladang* (the farm) during the day. These two FGDs were conducted at the *jambur* (community hall). The FGD with health personnel was conducted during the daytime after the midwives had finished their work at their clinics; this FGD was conducted in one of the clinics.

After each FGD, the researcher reviewed and typed up the handwritten notes gathered during the FGD session. The following day, the researcher played the audio recording of the session and analysed the information by comparing the recording with the notes. The researcher noted down missing information and interesting issues that emerged during the FGD sessions. Demographic information for each participant was recorded and reviewed. Using the criteria set for selecting FGD participants for individual interviews, five participants were selected, contacted and scheduled for interviews.

With the help of the female research assistant, the researcher contacted the selected participants and set up appointments for individual interviews. The interviews were conducted at participants' houses. During the interview sessions, participants were asked questions based on the initial indicative questions, and were provided with opportunity to explain issues in more depth and/or clarify incomplete information mentioned during the FGDs.

Individual interviews with policymakers in Medan and Jakarta

The interview with the policymaker in Medan (as the representative at the provincial level), was intended to test the indicative questions, informed consent form and demographic data sheet. The interview session revealed that under the provincial level, there is a district-level government that is also an important player in policy- and decision-making. Therefore, it was decided that during the actual study, policymakers from the district level would be included as participants.

Lastly, the pilot study was trialled by conducting an individual interview with a person from PNPB based in Jakarta. This participant represented policymakers at the central level. The individual interview was conducted using Skype. It aimed to test whether conducting a non-face-to-face interview could work, and to highlight any logistical issues should it be necessary to conduct an e-interview session later in the study. It was found that Skype facilitated the interview process, because with a good Internet connection, the primary researcher could see the participant from the camera, which helped to capture verbal and non-verbal communication.

The following table summarises the findings from the pilot study.

	Total Candidates	Total Participated	Results		
			Indicative Questions	Informed Consent	Demographic Sheet
Women who were pregnant during the 2013 eruption					
I. FGDs (total 4 participants)	4	4	FGD: No changes made	It was changed from *'sebelum'* (meaning before) to *'sesudah'* (meaning after).	No changes made
II. Individual interviews (1 participant)	1	1	Individual interview: No changes made		
Health personnel					
I. FGDs (total 3 participants)	3	3	FGD: No changes made	No changes made	There was a typo in the Bahasa version. This was changed from *'cacat'* (meaning disable) to *'catat'* (noted).
II. Individual interviews (1 participant)	1	1	Individual interview: No changes made		
Community leaders					
I. FGDs (total 3 participants)	4	3	FGD: No changes made	No changes made	No changes made
II. Individual interviews (1 participant)	1	1	Individual interview: No changes made		
Policymakers					
Individual interviews					
- in Medan	1	1	No changes made	No changes made	No changes made
- in Jakarta	1	1	The participant was not involved during the 2013 Sinabung emergency response. This was due to (high) turnover of policymakers. In this case, the participant was not asked information related to the 'past', only the 'present' and 'future' indicative questions	No changes made	No changes made

Table 4: Findings from the pilot study

This pilot study further informed the rigour of this qualitative case study. Lessons Learnt from this pilot study is summarised in Appendix K. Creswell and Mille (2000) noted that researcher reflexivity is an important aspects of rigour. The pilot study highlighted timing issues, gender of the researcher, choice of settings and logistics arrangements, including what snacks to serve at interviews, where to conduct interviews and accommodation for the research team.

Stage 3: Data Collection

The data collection for the actual study took place concurrently with data analysis. This allowed the researcher to generate an emerging understanding of the research question, which was useful to re-formulate the sampling and questions that were asked (DiCicco-Bloom & Crabtree, 2006). Sampling of participants was based on an iterative process (i.e. purposeful sampling) to maximise the richness and depth of data (DiCicco-Bloom & Crabtree, 2006; Malterud, 2001; Shakir, 2002). Data collection commenced in December 2017. Two villages in the relocation site of Siosar, which is located around 17 kilometres from KabanJahe (the capital of Karo district) were chosen. These two villages were relocated to a new place because the original villages were buried under volcanic ash during the 2013 eruption of Mount Sinabung. The information sheets, consent forms, and demographic sheets are presented in Appendices M, N, and O.

A. Phases of Data Collection

The phases of data collection of this retrospective evaluation case study were conducted in the following order.

- Phase 1: Document and policy analysis
- Phase 2: FGDs
- Phase 3: Individual interviews.

Phase 1: Document and Policy Analysis

The use of document and policy analysis has been recognised as a useful means of understanding a social phenomenon in a qualitative study. Bowen (2009) argued for the important role of document analysis as a way to triangulate findings, as documents

provide data and supplementary material. Bowen stated that, 'like other analytical methods in qualitative research, document analysis requires that data be examined and interpreted in order to elicit meaning, gain understanding, and develop empirical knowledge' (p. 27). Document analysis has a number of advantages, including availability and stability of data, and is thought to be an efficient and cost-effective method that has 'coverage' (p. 31). The use of documents and policy analysis as a data source was consistent with the principles of data collection in a case study (Yin, 2018).

A case study database was created to record relevant documents that were analysed and helped to obtain an in-depth understanding of the research question. The database recorded global and regional policies and documents, as well as documents from Indonesia (central, provincial, district and village levels) including: relevant government regulations; presidential laws; ministerial regulations; and provincial-, district- and village-level plans. Grey literature, including various reports produced by the United Nations and non-governmental organisations, were also collected, documented and studied. The document and policy analysis was conducted before, during and after the data collection. This took place in Auckland, Jakarta, Medan and the Sinabung site.

Phase 2: FGDs

FGDs were conducted in Sinabung for women, community leaders and health personnel participants. FGDs are considered a critical method of collecting case study data (Yin, 2012). The FGDs were chosen as the initial stage of engagement with the communities, and were intended to help provide a bigger picture of the research question. During the FGDs, participants' experience of accessing services as well as providing emergency response was explored. Through the engagement in the FGDs, participants were stimulated by comments from others in the group. These discussions created a critical, honest and spontaneous environment that may not be found in one-on-one interviews (Doody, Slevin, & Taggart, 2012, 2013; Kitzinger, 1994, 1995; Robinson, 1999; Then, Rankin, & Ali, 2014).

The FGDs were designed using homogenous groups. Homogeneity allows participants to express their opinions in their own words in a natural social setting. Therefore, the participants from multiple respondent groups were grouped homogeneously to ensure that they were comfortable and able to participate optimally (Robinson, 1999). Female

participants formed one FGD and health personnel, including midwives, formed another group. Community leaders were also placed in a separate group. Participants in this study were selected to represent different groups to provide an overall picture of the experience of accessing and providing MRH services during the selected disaster.

Phase 3: Individual Interviews

Semi-structured interviews were used as another data collection method in this study to support an in-depth understanding of the phenomenon (DiCicco-Bloom & Crabtree, 2006). Semi-structured interviews were chosen to delve deeply into social and personal matters. For women, community leaders and health personnel participants, the individual interviews were conducted to give more time and room for participants to share their experiences and perceptions on MRH provision during the disaster response.

B. Sampling

Participants in this research were: women who were pregnant during the 2013 eruption and who were users of MRH services; community leaders who were part of the affected communities as well as policy implementers; health personnel who were the health providers during the event; and government and non-government personnel assigned at regional and central levels (who represented policymakers). Figure 15 shows the characteristics of participants in this case study research.

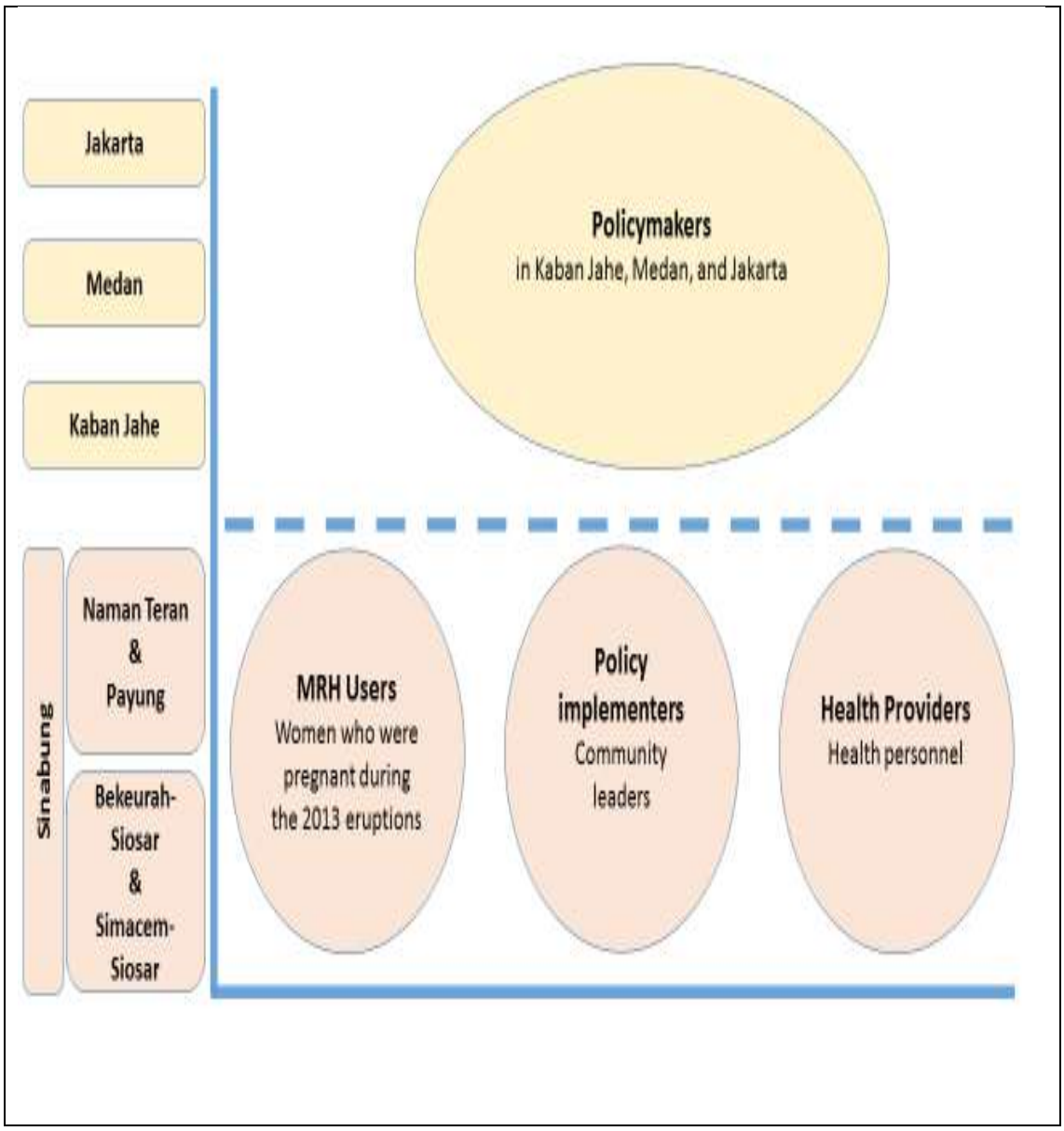

Figure 15: Locations and characteristics of interview participants

The interviews were conducted in Sinabung, KabanJahe, Medan and Jakarta. In Sinabung, participants were women who were pregnant, community leaders and health personnel. In Karo, Medan and Jakarta, participants were policymakers at the district, provincial and central levels. All policymaker participants were chosen from those in executive positions (i.e., heads of sections, heads of offices).

This following table presents the total number of participants involved in this case study (MRH users, policy implementers and health personnel).

	Number of Participants n = 58
Women who were pregnant during the 2013 eruption	10
Community leaders	16 (4 females, 12 males)
Health personnel	14 (11 females, 3 males)
Policymakers	18 (9 females, 9 males)

Table 5: Categories of interview participants (number and gender)

In total, 34 females and 24 males participated in the interviews for this case study.

Women Participants

The recruitment of women participants in this research represented MRH users. The inclusion criterion for women participants was being pregnant during the 2013 eruption. To define the group of women who were pregnant during the eruption on 15 September 2013, it was determined that women participants should have delivered their babies between September 2013 and June 2014. This timeframe was used because the average length of human gestation is 280 days (or 40 weeks) from the first day of the woman's last menstrual period (Jukic, Baird, Weinberg, McConnaughey, & Wilcox, 2013). During recruitment, no women who contacted the primary researcher had a history of abortion or miscarriage. The selection process is summarised in Figure 16.

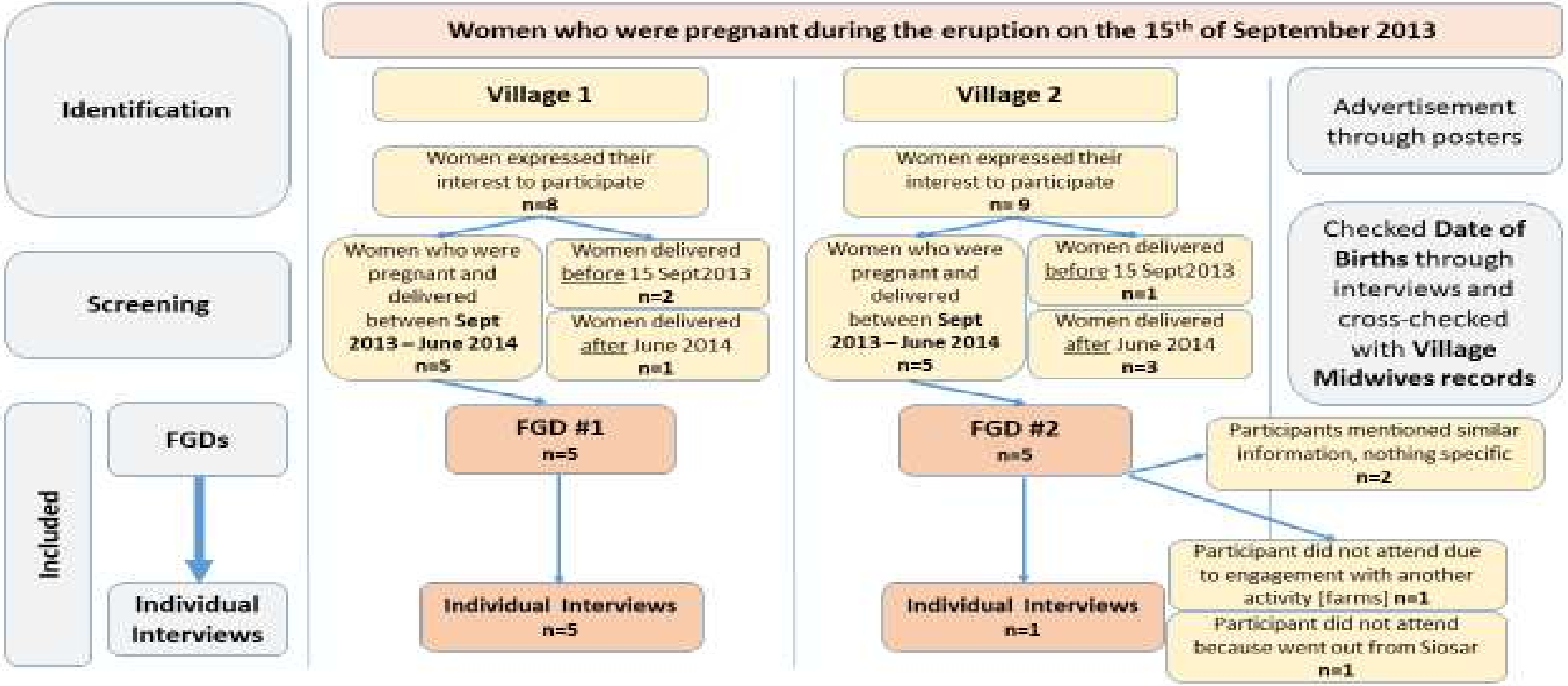

Figure 16: Selection process for women participants

The selection of women participants started with an advertisement. Posters were displayed on notice boards in *warung* (local shops), health posts and *kantor kepala desa* (office of village leaders) in November 2017. As of 5 January 2018, a total of eight women from Village 1 and nine women from Village 2 had contacted the primary researcher and expressed their desire to voluntarily participate in this study. After asking the date of birth of their children and cross-checking this with the list of children who attended monthly immunisations from the village midwives' book, women were recruited as described below.

A. **Women from Village 1:** Among eight candidates, five women were included and three were excluded.
    a. The five women were included because they had delivered their babies between 15 September 2013 and June 2014, assuming that they were in different trimesters of pregnancy during the 2013 eruption.
    b. Three women were excluded because:
        - Two had delivered their babies before 15 September 2013, meaning that when the eruption occurred, they were no longer pregnant.
        - One had delivered after June 2014, and it was assumed that she fell pregnant after the eruption.
B. **Women from Village 2:** Among nine candidate participants, five were included and four were excluded.

a. The five women were included because they had delivered their babies between 15 September 2013 and June 2014, assuming that they were in different trimesters of their pregnancy during the 2013 eruption.
b. Four candidates were excluded because:
    - One woman delivered her baby before 15 September 2013, meaning that she was no longer pregnant when the eruption occurred.
    - Three women had delivered after June 2014, and it was assumed that they fell pregnant after the eruption.

This following table summarises the demographic characteristics of the participating women.

Woman Participants (n=10)	Village 1 n=5	Village 2 n=5
Age, years		
- 18–24	2	1
- 25–49	3	4
Tribe		
- Karonese (local tribe)	5	4
- Non Karonese	0	1
Religion		
- Muslim	1	4
- Protestant	2	1
- Catholic	2	0
- Kong Hu Cu	0	0
- Buddhist	0	0
- Hindu		
Average daily income		
- Less than Rp50,000/day (around NZD5)	0	0
- Between Rp50,000 and 100,000/day (around NZD5–10)	5	5
- More than Rp100,000/day (around NZD10)	0	0
Average daily expenditure		
- Less than Rp50,000/day (around NZD5)	1	0
- Between Rp50,000 and 100,000/day (around NZD5–10)	4	5
- More than Rp100,000/day (around NZD10)	0	0
Daily job		
- Farmers	5	5
- Others	0	0

Table 6: Characteristics of women participants

Women Participants from Village 1: FGD 1

The five women participants from **Village 1** were gathered in one group (FGD 1). The study used the WHO's demographic definition of women of reproductive age, which ranged from 15 to 49 years, as well as that for children younger than 18 years (WHO, 2004). All five participants were aged 19–49 years; no participant was younger than 18 years. Participants' education level varied from intermediate to undergraduate levels; two participants had graduated from intermediate school, two participants had graduated from high school and one had an undergraduate degree. All participants were farmers. During the interviews, two participants were pregnant, and three were not pregnant. Three participants reported that they had experienced their first pregnancy

(primigravida) when the 2013 eruption occurred, and the other two participants were multigravida during the 2013 eruption.

Information gathered during the FGD was analysed using notes taken during the sessions that captured observations about non-verbal communication during the session, as well as re-listening to the audio recording. After analysing the information provided by participating women, the researcher contacted all five participants for individual interviews. To complement the limitations of FGDs (Krueger & Casey, 2014), the individual interviews aimed to gain an in-depth understanding and provide more time and room for each participant to speak and explain their experiences during the eruptions. The criteria for selecting FGD participants for an individual interview were: those who shared significant information, those who were not able to explain or elaborate issues/information during the FGD and those who were not able to speak during the FGD.

Women Participants from Village 2: FGD 2

The five women participants from **Village 2** formed another group (FGD 2). None of the participants were younger than 18 years, and all were aged 19–49 years. Participants' educational level varied from elementary to high school levels; two participants had graduated from elementary school, one had graduated from intermediate school and two had graduated from high school. All participants reported that they worked as farmers. None of the participants was pregnant during the interview. Two participants were primigravida during the 2013 eruption, and the other three were multigravida.

Information gathered during FGD 2 was analysed using notes taken during the sessions that also captured observations about non-verbal communication, and re-listening to the audio recordings. After analysing the information provided by these women, the researcher contacted the three participants for individual interviews who had provided new information during the FGD. Unfortunately, only one participant was available for an interview. The other two participants were away from the village as one went to Medan for a prolonged stay because she had to take care of her sick mother-in-law, and the other woman went to work on a farm located outside Siosar.

Community Leader Participants

The recruitment of community leader participants represented both the affected population and those involved during the 2013 emergency response. The selection process is summarised in Figure 17.

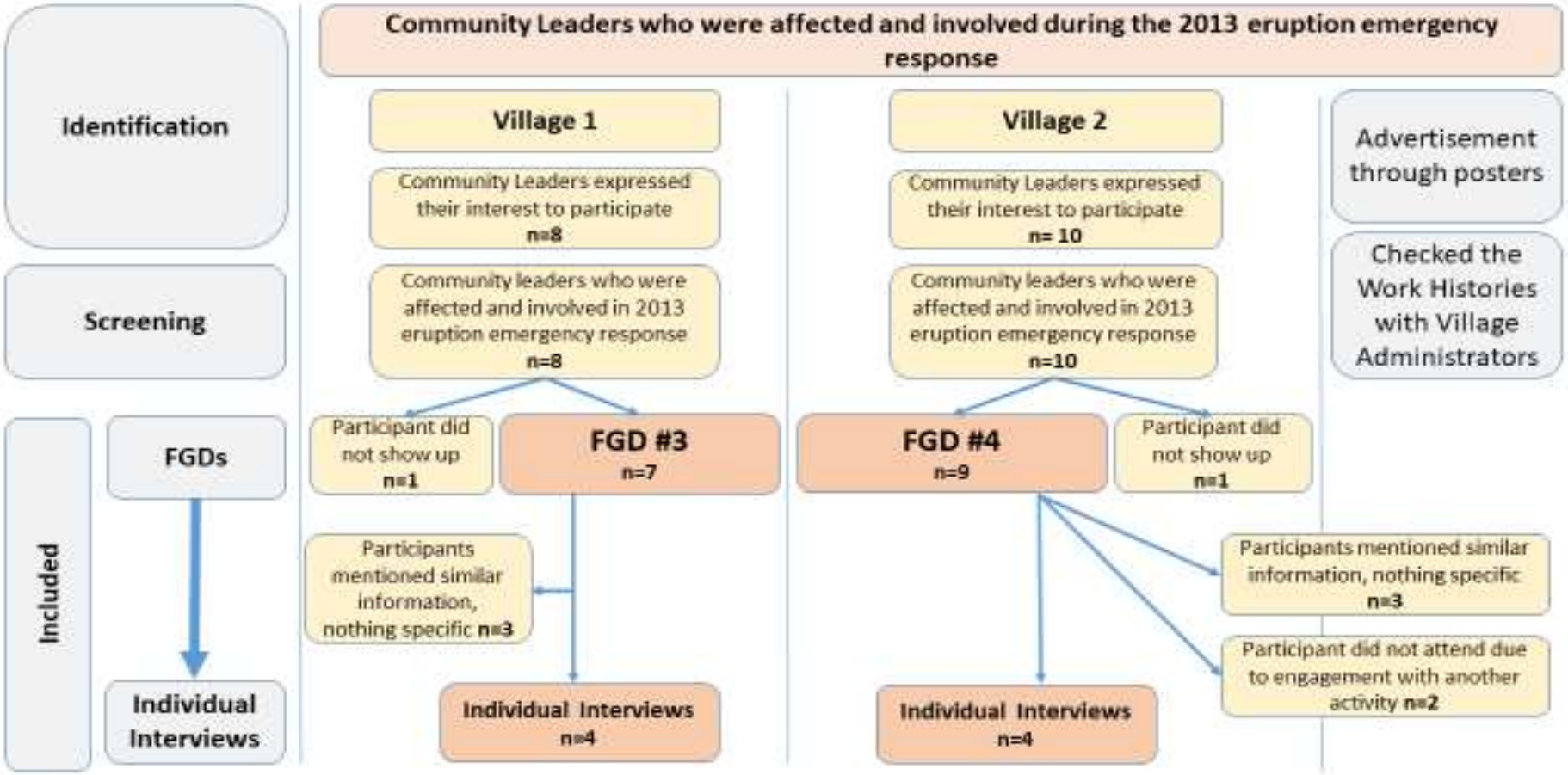

Figure 17: Selection process for community leader participants

The selection of community leader participants started with an advertisement displayed on posters on notice boards in *warung* (local shops), health posts and *kantor kepala desa* (office of village leaders) in November 2017. As of Wednesday, 3 January 2018, a total of eight community leaders from Village 1 and 10 from Village 2 had contacted the primary researcher and expressed desire to voluntarily participate in this study. The primary researcher asked permission to check their position in each village with the village administrators. All candidates had leading positions within their communities, and were all contacted to participate in this study.

A. **Community leaders from Village 1:** Among eight candidate participants that were invited, seven attended the FGD; one could not attend because of an urgent task.
B. **Community leaders from Village 2:** Among 10 candidate participants that were invited, nine attended the FGD; one could not attend for an urgent family reason.

The following table summarises the demographic characteristics of the community leader participants.

Community Leader Participants *(*n=16)	**Village 1 n=7**	**Village 2 n=9**
Age, years		
- 18–24	1	2
- 25–49	2	3
- More than 50	4	4
Sex		
- Male	6	6
- Female	1	3
Function		
- Village head	1	0
- Religious leader	2	3
- Members of women's groups	1	2
- Planning officer	1	2
- Village treasurer	2	2
Tribe		
- Karonese (local tribe)	6	9
- Non Karonese	1	0
Religion		
- Muslim	5	4
- Protestant	1	4
- Catholic	1	1
- Kong Hu Cu	0	0

- Buddhist	0	0

Table 7: Characteristics of community leader participants

Community Leader Participants from Village 1: FGD 3

The seven community leader participants from **Village 1** formed one group (FGD 3). One participant was a woman and six were men. Information gathered during the FGD was analysed using notes taken during the sessions that also captured observations of non-verbal communication during the session, and re-listening to the audio recording. After analysing the information obtained, the researcher contacted four participants for individual interviews. These four participants were chosen because they provided information that needed to be explored further. Inviting them for individual interviews gave them more time and room to speak and explain their experiences during the eruptions.

Community Leader Participants from Village 2: FGD 4

The nine community leader participants from **Village 2** formed another group (FGD 4). Three participants were women and six were men. Information gathered during the FGD was analysed using notes taken during the sessions that also captured observations of non-verbal communication, and re-listening to the audio recordings. After analysing the information provided by participants, the researcher contacted the four participants who provided new additional information for individual interviews.

Health Personnel Participants

The recruitment of health personnel participants represented the MRH providers who were involved during the 2013 emergency response. The selection process is summarised in Figure 18.

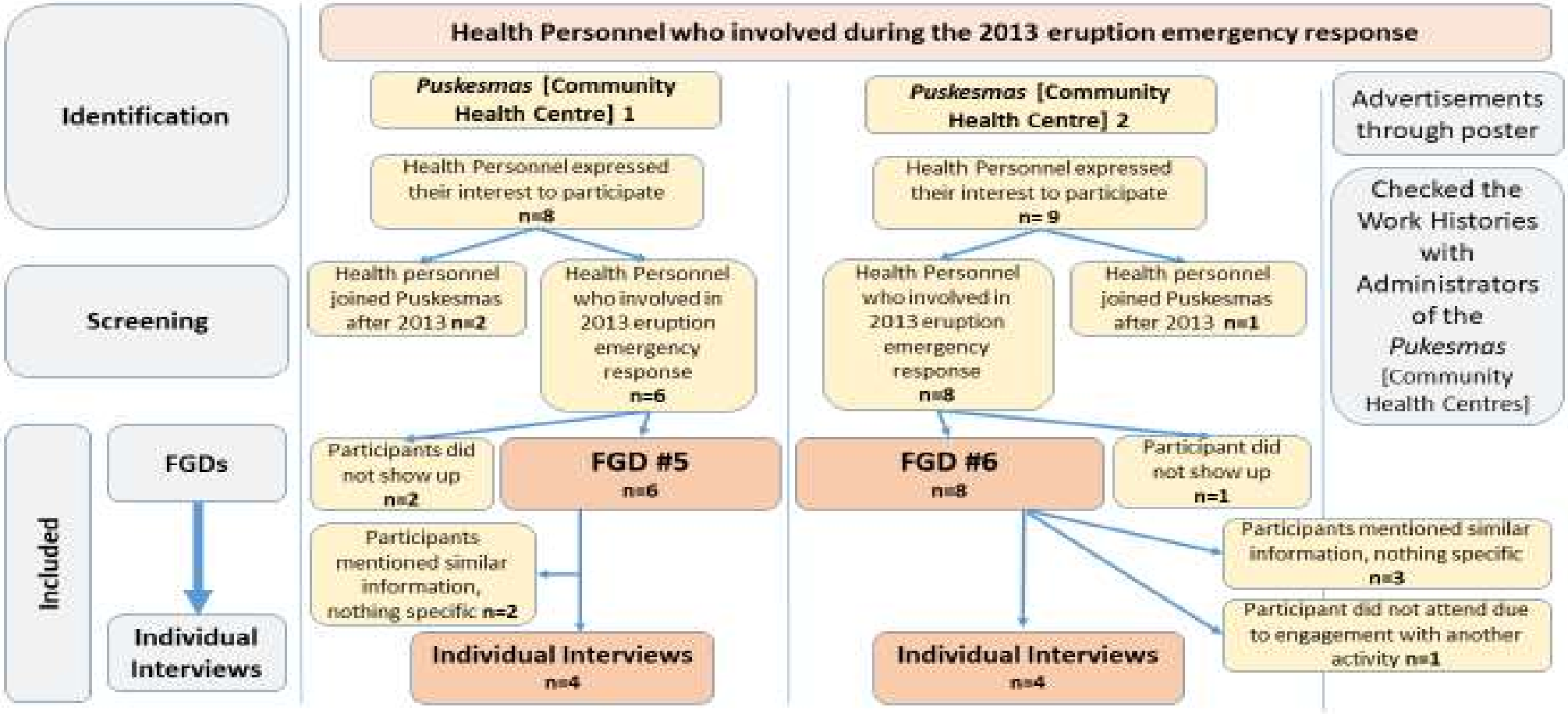

Figure 18: Selection process for health personnel participants

The selection of health personnel participants started with an advertisement displayed on notice boards at the *Puskesmas* and the District Health Office of Karo in December 2017. As of Wednesday, 3 January 2018, eight health staff from *Puskesmas* 1 and nine from *Puskesmas* 2 had contacted the primary researcher and expressed desire to voluntarily participate in this study. The administrators from the two Puskesmas shared the list of staff with the Researcher to ensure that all participants were genuine *Puskesmas* staff.

A. **Health personnel from *Puskesmas* 1:** Among eight candidate participants, six were included because they were involved during the 2013 response. Two participants were excluded because they had joined the *Puskesmas* in 2015.
B. **Health personnel from *Puskesmas* 2:** Among the nine candidate participants, eight were included because they were involved during the 2013 response. One participant was excluded because they had joined the *Puskesmas* in 2015.

This following table summarises the demographic characteristics of the health personnel participants.

Health Providers Participants (n=13)	**Puskesmas 1 n=6**	**Puskesmas 2 n=7**
Sex		
- Male	4	6
- Female	2	1
Function		
Head of Puskesmas	0	1
Head of Family, Maternal and Child Health Unit	1	1
Village midwives	2	4
Pharmacist	1	0
Nutritionist	1	0
Hygiene promoter	1	1
Others	0	0
Tribe		
- Karonese (local tribe)	6	7
- Non Karonese	0	0

Table 8: Characteristics of health personnel participants

Health Personnel Participants from *Puskesmas* 1: FGD 5

The six participants from ***Puskesmas* 1** formed one group (FGD 5). Four participants were women and two were men. After analysing the information provided, the researcher contacted four participants for individual interviews to gain a greater understanding of the issues mentioned. The criteria for selecting participants for individual interviews were: those who shared significant information, those who were not able to explain or elaborate issues/information and those who were not able to speak during the FGD.

Health Personnel Participants from *Puskesmas* 2: FGD 6

The eight participants from ***Puskesmas* 2** formed another group (FGD 6). Seven participants were women and one was a man. Information gathered during the FGDs was analysed using notes taken during the sessions, re-listening to the audio recordings and reading the observation paper that captured non-verbal communication during the session.

There was not enough time in the 1–2-hour sessions to capture the experiences and stories from all health personnel. Therefore, all of these participants were invited for individual interviews to gain an in-depth understanding of the provision of MRH during the 2013 disaster.

Policymaker Participants

A total of nine females and nine males participated in interviews for this case study research. The sampling of these participants was based on the inclusion and exclusion criteria, as follows.

Inclusion criteria:

- Holding a managerial level position during the 2013 eruption;
- Managed directly (came down to the affected site) or indirectly (involved remotely from Jakarta/Medan) in the emergency response to the 2013 eruption;
- From fields related to this study, either health (MRH) or disaster management.

Exclusion criteria:

- Holding a non-managerial post during the 2013 eruption;
- Did not manage the emergency response of the 2013/recently posted as a manager;
- Held a managerial post in fields that were not related to this study.

The recruitment of government and non-government stakeholders at central, provincial and district levels was meant to represent the policymakers that played a role in MRH in emergencies and DRM. The selection process is summarised in Figure 19.

Figure 19: Recruitment process for policymaker participants

The selection of policymaker participants started using advertisement posters (in KabanJahe and Medan) and a mailing list (Jakarta). Posters were placed on the announcement boards of the district and provincial health and disaster management offices. As no one showed interest in participating in this study, the researcher modified the sampling approach by using a snowball/chain referral sampling method (Biernacki & Waldorf, 1981; Goodman, 1961). This approach has been used in qualitative research with hard-to-reach populations (Heckathorn, 2011; Morgan, 2008). Snowball sampling allowed the researcher to reach policymakers who were usually 'busy persons juggling with place and time' using referrals from 'initial informants to nominate other participants who meet the eligibility criteria of a study' (Morgan, 2008, p. 2). Desmond (2004) described challenges in studying an elite group and noted that time and place are some of the main issues encountered when dealing with these persons. Another reason for using snowball sampling was to get referrals for policymakers from the same institution at the district, provincial and central levels to provide additional explanations and gain an in-depth understanding about issues related to the research.

The following table summarises the demographic characteristics of policymaker participants.

Policymaker Participants (n=18)	**KabanJahe n=4**	**Medan n=5**	**Jakarta n=9**
Sex			
- Male	3	2	4
- Female	1	3	5
Institution			
Government organisations	3	4	7
Non-governmental organisations	1	1	2

Table 9: Characteristics of policymaker participants

Selection of Policymaker Participants in KabanJahe, Karo District

The selection started with a poster displayed on notice boards in the office of *Dinas Kesehatan Kabupaten* (District Health Office) and *Badan Penanggulangan Bencana Kabupaten* (District Disaster Management Office) of Karo District in November 2017. By the end of December 2017, the researcher had not received any expressions of interest via email or telephone.

The researcher then contacted the Head of *Dinas Kesehatan Kabupaten* and *Badan Penanggulangan Bencana Kabupaten* of Karo District to asking for potential stakeholders to participate in this study. The researcher received nine names, of which seven were contacted. Two of the names provided could not be contacted because the telephone numbers were not valid. Among the seven individuals that were contacted, three government officials and one non-government person agreed to participate in the study. The information sheet was sent to participants 1 week before the interviews.

The interviews were conducted in the office of each stakeholder. Three were rescheduled twice because of urgent calls from superiors (i.e. Bupati/Head of District). This data collection was conducted during the first quarter of the year, when these offices are usually busy with annual planning and review meetings.

All participants were given opportunities to clarify and ask questions related to this study. They signed informed consent forms before the interviews commenced and agreed to be audio recorded. After each interview session, the researcher highlighted the importance of gaining more explanation from policymakers at the provincial and central level. The researcher asked participants from district level if there were any relevant persons at the provincial level that would be interested in participating in this study.

Selection of Policymaker Participants in Medan, North Sumatera Province

Having been referred to and received contact from policymaker participants at the district level, the researcher reviewed their names and functions against inclusion criteria. The researcher received six names, and contacted them first via text message and then by telephone. In Medan, the female research assistant advised that sending text messages (either SMS or WhatsApp) to introduce the researcher's identity and purpose before making a telephone call was more acceptable and workable. People in Medan do not usually answer the telephone to calls from unknown numbers, as many sales people randomly call people on their mobile phones. Also, the research assistant noted that *pejabat-pejabat* (policymakers) were not familiar with this kind of communication, including responding to a request to participate in a study, or using emails as it was quite rare for them to use email.

The researcher contacted the six names provided. Five people (four government and one non-government) agreed to participate in this study. One candidate did not show interest in participate in the study because of another commitment. Information sheets were sent out around 2 weeks before the interviews. The interviews were conducted in the office of each stakeholder. All participants were given opportunities to clarify and ask questions related to this study. They signed informed consent forms before the interviews commenced and agreed to be audio recorded. After each interview session, the researcher highlighted the importance of having further explanations from policymakers at the provincial and central level. The researcher asked participants from the provincial level if there were any relevant persons at the national level that would be interested in participating in this study.

Selection of Policymaker Participants in Jakarta, Central Level

A total of six names were given to the researcher by participants from the provincial level. A review of their functions showed that one did not meet the inclusion criteria. Similar to the procedure used in Medan, initial communication was via text and then telephone calls. All five potential participants agreed to be interviewed. An additional six names were provided after the sessions with participants from Jakarta. These additional six names were then reviewed against the inclusion criteria and contacted; all of these participants agreed to be interviewed. In total, seven government and two non-government participants were involved in the individual interviews.

Information sheets were sent out around 1 week before the interviews. The interviews were conducted in the office of each stakeholder. All participants were given opportunity to clarify and ask questions related to this study. They signed informed consent forms before the interviews commenced and agreed to be audio recorded.

Ethics

The ethical aspects considered when conducting this case study research are explained using the Treaty of Waitangi principles of partnership, participation and protection. These principles were chosen because there are no such ethical principles written in Indonesia. The Treaty of Waitangi

principles of partnership, participation and protection were also used when submitting the ethics application for this study to the Auckland University of Technology Ethics Committee (AUTEC).

The AUTEC approved this research on 18 July 2017 (AUTEC Reference number: 17/231). In Indonesia, the *Badan Kesatuan Bangsa dan Politik - BaKesBangPol* (the national unity and politics body) of North Sumatera province approved this research on 14 August 2017 (Reference number: 070 – 4124 / BKB-P) and on 8 February 2018 (Reference number: 070 – 312 / BKB-P). In addition, the Health Research Ethics Committee of the Faculty of Nursing University of North Sumatera approved this research on 25 July 2017 (Reference number: 1262/VII/SP/2017). The AUTEC ethichs approval and local ethics approval are presented in Appendices D, E, and F.

Partnership

In the initial consultations with the community leaders and after they were given the overview of the research, they welcomed the researcher and indicated they valued the aim of the study. Specifically, members of women's groups were enthusiastic about the research experience and wanted to see improvement in MRH services for pregnant women during a disaster in Indonesia. During the consultation sessions, snacks, drink and food prepared by the village women were served. They were also happy to use their carpets during interview sessions at their *jambur* (community hall).

The recruitment of the female research assistant was helpful in building relationships and trust with local communities, particularly with women. In addition, the research assistant was helpful in making contacts with health personnel, as she is a midwife working in a hospital in Medan, the capital of North Sumatera Province.

Participation

During the consultation with community leaders in Sinabung, the researcher asked stakeholders to participate in this research by sharing their opinions and suggestions on how well the research could be conducted. The provided suggestions related to logistics and accommodation for the researcher and female research assistant. Furthermore, during data collection, the FGDs and individual interviews were conducted in a participatory manner. Participants were given opportunities to choose the best time for meeting the researcher. Women participants were given opportunity to choose whether they preferred to be interviewed by the male researcher, the female research assistant or both.

Protection

The researcher conducted the recruitment process and the research assistant was not included in the selection process. The researcher interacted with the participants through email, telephone calls and face-to-face communication. After the decision regarding participation was made, the research assistant gave the information sheets to some of the women participants. This process was used to protect information related to potential participants and avoid bias or conflicts of interest, as the research assistant might have nominated someone she knew.

Each interview was conducted in a secure place where other people could not listen to the conversation. The aim was to prevent *'dinding bertelinga'* (wall has ears). The FGDs and individual interviews with women were challenging because of the tendency for babies and children to be present. The children were given paper and crayons to keep them occupied.

Participants were informed about the protection and confidentiality aspects of their participation. The agreement about protection and confidentiality was stipulated in the consent forms signed by each participant.

C. Concurrent data collection and analysis

Data analysis commenced simultaneously with data collection in an 'intermingled fashion' (Yin, 2012, p. 175). Although generic semi-structured interview questions were prepared and reviewed during the pre-understanding interview at the pilot testing stage, the interview guide was informed by data analysis from the previous stage, and adjusted according to the previous findings and analysis.

The field notes were initially written in Bahasa Indonesia. The FGDs and individual interviews were recorded using a tape recorder and transcribed in the original language. To help transform data into meaningful outputs (Gibbs, 2008; M. D. Myers, 2013), the verbatim transcription in Bahasa Indonesia was used as the basis for data analysis. During transcription, non-verbal communications (including gestures and intonation) were captured and indicated in brackets. This allowed the researcher to gain an in-depth understanding of the phenomenon by analysing the data in the original language.

The female research assistant helped in the analysis process by typing up the findings while the primary researcher performed further checking. In addition, some interviews were transcribed

by the primary researcher, and the female research assistant read through and checked for missing information. All transcripts were uploaded into NVivo software to facilitate data analysis.

Stage 4: Data Analysis

This section explains the process of data analysis. This started with the preparatory work before analysing data through transcription and the use of NVivo software, and was followed by the process of analysing data using thematic analysis based on the model developed by Braun and Clarke (2013). This explains how the diagnostic event approach influenced the data analysis. This section concludes with an explanation of how data gathered from different groups of participants were triangulated and analysed.

All transcripts were stored in NVivo to allow the researcher to audit findings and guard against excessive emphasis on rare results that happened to suit the researcher's preferred argument (Bassett, Mills, Durepos, & Wiebe, 2009; Bergin, 2011). NVivo has nodes that are collections of references with specific themes, places, people or other areas of interest.

Although data analysis was performed in the original language (Bahasa Indonesia), the transcripts were made available in English using Google translate. Only selected quotes were properly translated into English. The translation process from Bahasa Indonesia to English used a piecemeal or 'elegant free translation' strategy, whereby only a few quotes were included to place the material in context (Birbili, 2000). Furthermore, to manage translation issues, this study used the following steps. 1) Preparation of the interview checklist, focus group topic guides, letters of invitation and consent forms were pre-tested and piloted in the local language (Hambleton, 1993). 2) The primary researcher compared two versions of the transcripts (Ercikan & Roth, 2011; Halai, 2007). 3) Triangulation was performed using multiple methods (Mason, 2002; Scapens, 2004).

Application of Thematic Analysis and Diagnostic Event During Data Analysis

Data collected from the field were analysed using a thematic analysis approach. Thematic analysis is a method for identifying, analysing and reporting patterns (themes) within data (Braun & Clarke, 2013). Gerard Houlton invented thematic analysis in 1970 (Merton, 1975), and it began to appear as an approach for analysing qualitative data in the 1980s and 1990s. Since 2006,

through Braun and Clarke, thematic analysis has been increasingly used (Braun, Clarke, & Terry, 2014). The thematic analysis described by Braun and Clarke emphasises reflexivity during data analysis and has six step: familiarisation with data, generating initial codes, searching and reviewing of themes, defining and naming themes and reporting (Braun & Clarke, 2013).

This case study used a reflective thematic analysis approach to gain an in-depth understanding of the phenomenon under study. Data analysis commenced simultaneously with data collection in an 'intermingled fashion' (Yin, 2012, p. 175). Data were categorised into a coding framework (DeCuir-Gunby, Marshall, & McCulloch, 2011) with three levels of codes: descriptive, categorisation and analytic. During the data analysis, this retrospective case study relied on the theoretical proposition (Yin, 2013) of better preparedness for better response. Data and information were analysed to evaluate whether the preparation measures had helped during the emergency response to the 2013 eruption of Mount Sinabung. This theoretical proposition stemmed from the 'why' and 'how' based on data from the document and policy analysis, as well as the interviews, which helped to understand the process of integration.

During the concurrent data collection and analysis processes, the diagnostic event approach helped to identify 'signs', that were part of the objective evidence that could be 'diagnosed' from having a thorough 'anamnesis' to gain an in-depth understanding of the history. The application of anamnesis in this case study was through individual interviews and FGDs. Undertaking fieldwork provided an opportunity to apply anamnesis and physical examination to gain an in-depth understanding of the phenomenon. When conducting anamnesis and physical examination in the field, the diagnostic event approach allowed the researcher to perform a diagnostic procedure that consisted of 'inspections, palpations, percussions and auscultations'. This was achieved by obtaining demographic information, interviewing participants, recording the conversations, inspecting the non-verbal communication of each participant, 'palpating/investigating' participants' statements by probing their answers, 'percussing/tapping into' their experiences and listening carefully when they were telling their stories. Furthermore, as the data were transcribed, the recorded interviews were played along with reading the transcriptions to 'auscultate/re-listen' to participants' stories and experiences. This data analysis stage was part of the diagnostic process and generated a lot of information that suggested/informed revisions and adjustments to key indicative questions for subsequent interviews.

Furthermore, the diagnostic event approach helped to analyse the data using the reflective thematic analysis model. To define the diagnosis, the reflective thematic analysis of Braun and Clarke (2013) was used to analyse the data. The six stages of reflective thematic analysis described by Braun and Clarke start with the familiarisation stage, encompass generating codes and reviewing and defining themes, and finishes with reporting. Throughout these stages, a set of main or 'diagnostic' questions were created and used to help the process. Table 10 locates the set of diagnostic questions in each stage of the reflective thematic analysis. This cyclical process (could) continue across the cycle.

Reflective Thematic Analysis *(Steps adopted from Braun and Clarke)*	**Diagnostic Questions**
Familiarisation	**Familiarisation notes:** • Demographic characteristics of participants (micro-meso-and-macro bubbles) • Interviews and participants' non-verbal communication **Transcription:** • Have interviews been transcribed in a verbatim manner? • Have the non-verbal communication properly captured?
Coding	**Examining the data** • What events and times contribute to the phenomenon (capital event)?
Themes	**Re-examining the data** • Have the codes been re-read, re-studied and re-checked properly? **Comparing the data with field notes** • Have the field notes and familiarisation notes been used to reflect the codes?
Report	• Have all events been captured chronologically? • What outcomes were produced by each event? • Has the information sufficiently answer the research questions?

Table 10: Ten diagnostic questions used during the reflective thematic analysis process

With the application of the diagnostic event approach, the familiarisation stage was conducted through reflectively examining the interviews. Notes from the fieldwork that captured non-verbal communication and demographic sheets were used during the familiarisation steps. These were useful to understand the background and 'micro-meso-exo-and-macro bubbles', according to the SEM (Bronfenbrenner, 1994) that affected each participant. This model has been used in different disciplines including health (Chimphamba Gombachika et al., 2012) and DRM (Adger, Hughes, Folke, Carpenter, & Rockström, 2005). The SEM helped the study to focus on adaptive

capacity, transformability, learning and innovation. Understanding participants' bubbles resulted in a better understanding of participants' characteristics and enhanced familiarisation with the data. Generating codes could only be done properly after gaining familiarisation with the data. During the coding stage, the diagnostic event emphasised the researcher needed to look at 'times and events and what happened' within the participants' interviews. These details helped when reflecting on the findings, and when generating and refining sub-themes and themes to understand the procession of the phenomenon before moving to the last stage of reflective thematic analysis (reporting). Finally, all thematic analysis stages are designed in cyclical ways, and require several reviews and re-adjustments of codes, sub-themes and themes. Before reporting the analysis, it was necessary to recheck the diagnostic questions to ensure all questions were followed and the themes that are reported were produced as a result of thorough reflection on the process during the diagnosis of the main event/phenomenon.

Data Triangulation

Triangulation is an essential technique for studying complexities and helping to understand a phenomenon. Fusch and Ness (2015) defined triangulation as 'how one explores different levels and perspectives of the same phenomenon' and links them together in order 'to get data saturation' (2015, p. 1411). Triangulation helped to bring both concordance and discordance from different angles at the same time. Triangulation for completeness is thought to 'lead to a more holistic understanding of a concept and can improve scientific rigour' (Jones & Bugge, 2006, p. 612). Realising the limitations of each method, triangulation served as a technique to ensure complementary and comprehensive information was used. The limitations of each method influenced the level of information gathered. Information gathered from different sources may vary depending on from whom, where and when it was gathered. Denzin (2017) noted that triangulation is intended to increase objectivity, validity and truth by involving multiple sources engineered by and from different people in different times and space. Denzin further divided triangulation into four purposes. First, data triangulation that includes space (where), time (when) and people (who). Second, investigator triangulation that involves a team of researchers during the execution of research, gaining an understanding of the roles they play during the process. The third purpose is theory triangulation, which involves the application of more than one theory to interpret a selected phenomenon. Lastly, methodological triangulation that involves using more than one method, technique or procedure to gather information.

Within case study research, Yin (2018) contended that triangulation is part of the construct validity used to validate data. He argued that triangulation of information from multiple sources along with member checking would ensure the construct validity of a case study. Validating data processes is part of the rigour of the research, particularly in terms of reliability.

A major strength of case study data collection is the opportunity to use many different sources of evidence. A case study requires data from two or more sources of evidence and triangulates them to gain an in-depth understanding and a thick description of a phenomenon (Yin, 2018). Similarly, Patton (2015) argued the importance of collecting information from multiple sources and triangulating them to develop convergent evidence to strengthen the construct validity of a case study. The application of triangulation in the present case study meant that any information gathered and analysed from multiple sources provided an opportunity to enhance the level of confidence in the understanding, and offered proof that the case study had rendered the phenomenon accurately.

The triangulation process in this case study allowed the researcher to first see similarities across different sources of information, and second to understand how various sources (i.e. what was written in relevant documents and policies against women, community leader, health personnel and policymaker participants' experiences and perspectives) viewed the phenomenon from different perspectives. This triangulation process was consistent with the philosophical stance of this research that departed from post-positivism, which sees the truth from more than one angle (Giddings & Grant, 2002).

Furthermore, triangulation gave a further understanding of the strengths and weaknesses of the methods used during data collection. Foss and Ellefsen (2002) argued that the process of triangulation could enhance the understanding of study design, including the ability to see how one method could complement other methods as well as the concept, and improve scientific rigour. This triangulation process also gave the researcher a chance to improve their skills, and to extend and argue the findings using information from different sources, and by doing so, enhance the transparency, reflexivity and dependability of the research (Guba & Lincoln, 1994). This is consistent with the argument by Jones and Bugge (2006) that triangulation gives the researcher the opportunity to improve their research skills.

As this research adopted Yin's case study model (2018), it was imperative to triangulate the data from multiple sources to corroborate the information. Denzin (2017) stated that data triangulation involves people, space and time. This is consistent with the diagnostic event approach (Moore, 1987) used in this case study, which considered time, processes and context as important elements that engineer a phenomenon. Information gained from the four participant groups was triangulated by considering their background, the time when they experienced accessing/providing MRH services as well as managing the disaster and the space that included the surrounding environment as influencing the provision of MRH services.

Data analysis was concurrently conducted with data collection that started during fieldwork. Data were collected through FGDs and individual interviews. This study involved women, community leaders and health personnel participants, as well as policymaker participants in Karo, Medan and Jakarta. After data collection finished, the analysis continued until mid-March 2019. Throughout this process that used the thematic analysis approach of Braun and Clarke (2006, 2013), nodes were generated from Stage 2 (FGDs and interviews with women participants), Stage 3 (FGDs and interviews with community leader participants), Stage 4 (FGDs and interviews with health personnel participants) and Stage 5 (FGDs and interviews with policymaker participants).

Data triangulation is considered Stage 6 of this research, whereby various kinds of information that was thematically analysed and produced in several nodes throughout Stages 2–5 was analysed against information gathered from Stage 1 (e.g. document and archival records analysis), which were kept in the case study database. Stages during data analysis and triangulation are summarised in Figure 20.

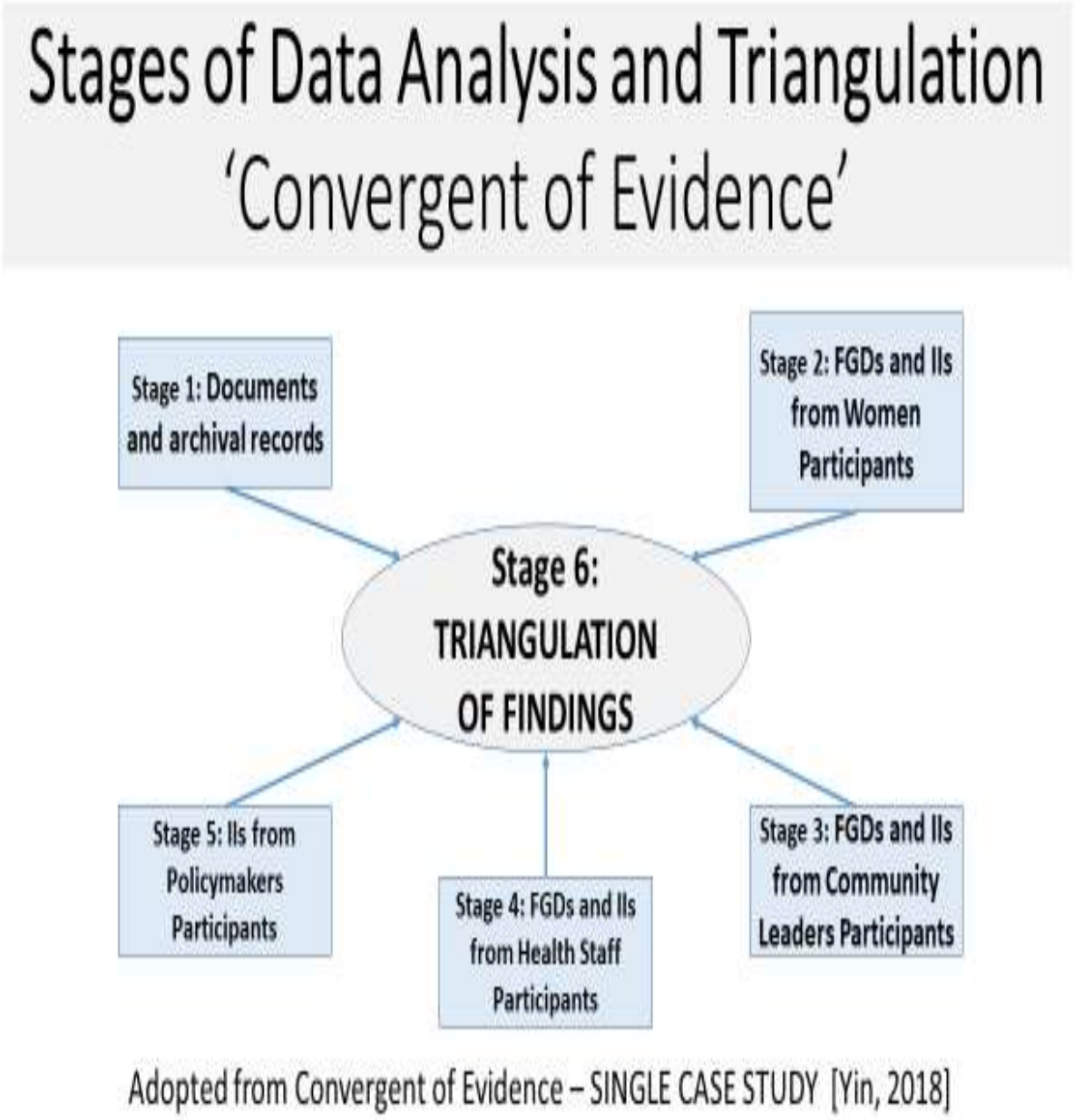

Figure 20: Stages during data analysis and triangulation

This data triangulation process carefully examined the information from multiple sources and documents by looking at concordance and discordance of data nodes (themes and categories) across stakeholders. This process, according to the case study protocol was conducted from mid-March to mid-May 2019.

The elements of space (where), time (when) and people (who) described by Denzin (2017) helped to diagnose the event by examining women's experiences of accessing MRH services while they

were pregnant during the 2013 eruptions, as well as community leaders' experience while affected by the event and staying in temporary shelters. Their information was triangulated against documents and policies and experiences of participating health personnel that provided MRH services during the emergency response phase, as well as policymakers' experience and perspectives regarding the overall disaster response and management during the event.

Lastly, while considering the stakeholders' conditions involving time and space, the triangulation process also looked at methods used to help clarify the limitations of the research. The triangulation process explored whether the FGDs and individual interviews that were chosen as data collection techniques were sufficiently effective to gain a deep understanding of the phenomenon. This helped to enhance the transparency, reflexivity and dependability of the research. This data triangulation process served as verification and offers completeness (Tobin & Begley, 2004). Data triangulation led to final findings that provided a clear understanding of the phenomenon.

Stage 5: Sharing and Reporting this Study

During the execution of this study, a number of conferences were attended by the researcher to share the research methodology and selected findings, as well as to obtain feedback for improvements. In addition, one paper entitled 'Maternal and Reproductive Health Services during the 2013 Eruption of Mount Sinabung: A Qualitative Case Study from Indonesia' was accepted, and published in the Global Public Health Journal (https://doi.org/10.1080/17441692.2019.1657925).

Finally, the report of this research will be shared with academics and practitioners. The report of this study is also planned to be shared with relevant stakeholders at the country, regional and global levels including the Indonesian BNPB and Ministry of Health, ASEAN, the Asian Disaster Preparedness Centre, non-governmental and United Nation agencies and donor communities, including the New Zealand Development Aid. A diagram of the dissemination strategy is presented in Appendix S.

5.3. RIGOUR

Rigour supports the credibility of the research. Yin (2018) emphasised the importance of having clear methodological rigour when conducting a case study. This research incorporated rigour in each of its stages and phases. The following figure shows how the rigour was included in each stage of this case study.

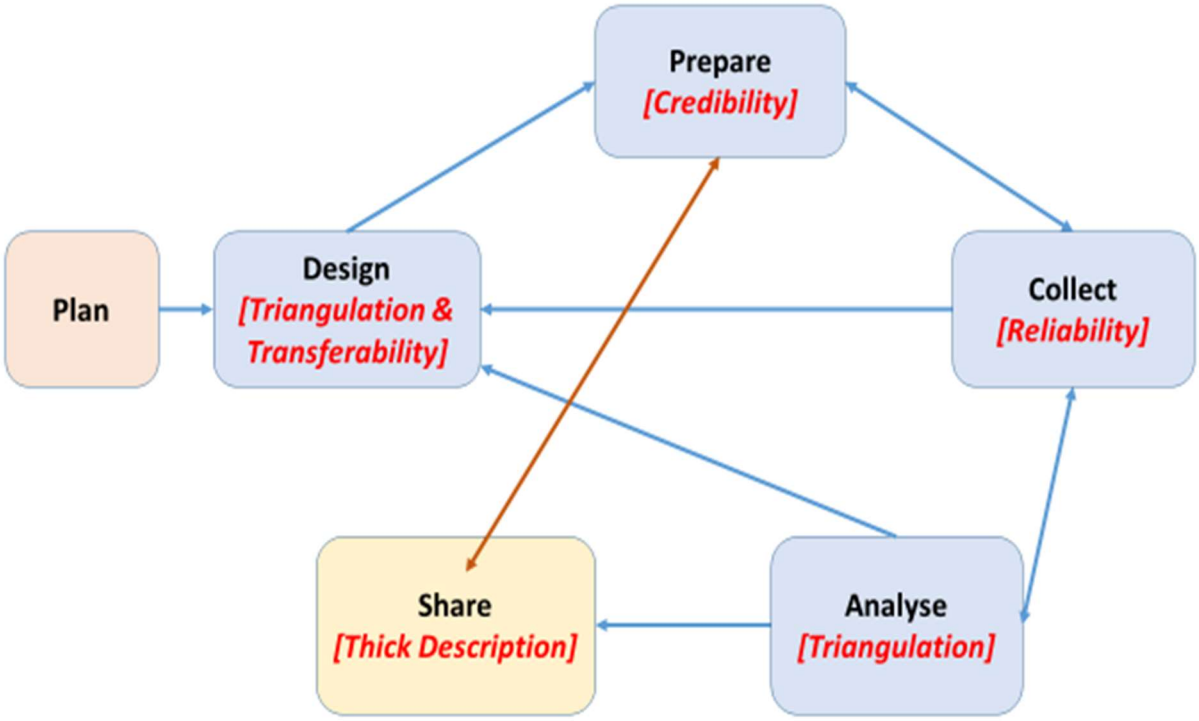

Figure 21: Approaches to rigour throughout the case study stages (Adopted from Yin, 2018)

Design Stage

This case study was designed to include 'the use of multiple sources of evidence' (Yin, 2009, p. 41). This incorporated document and policy analysis and triangulation of this information with data from FGDs and individual interviews. This aimed to ensure the quality of the research. Furthermore, the case of the 2013 eruption of Mount Sinabung represents one of the most common natural disasters in Indonesia and supports transferability, whereby the findings may or may not be relevant to other contexts. Regardless, the design, procedure and technique of this

study have potential to be used for similar studies in other areas of Indonesia and countries across Asia and the Pacific region that have a similar context.

Preparation Stage

Credibility in a qualitative case study is indicated by the ability to conduct research in a believable manner (Houghton, Casey, Shaw, & Murphy, 2013). This case study was managed in accordance with case study research procedures as described by Yin (2018). A clear focus and event of a phenomenon were selected. Recruitment of a female research assistant ensured credibility through training and ensuring she was familiar with the intricacies of the study. Moreover, feedback regarding the interview guideline obtained from the pilot study ensured reflexivity and confirmability.

Data Collection Stage

Dependability refers to the concept of reliability, or how stable the data are (Rolfe, 2006). This research had a clear purposeful sampling strategy that ensured the stability of findings. This was done through a rotational analysis of relevant stakeholders, including women, health personnel (including midwives), community leaders and policymakers. Initial transcripts were shared with the participants as part of a member-checking strategy (John W Creswell, Hanson, Clark Plano, & Morales, 2007; J. W. Creswell & Miller, 2000; Lincoln & Guba, 2004; Tashakkori & Creswell, 2007) and respondent validation (Lincoln & Guba, 2002; Torrance, 2012). Respondent validation is defined as '…involves research participants...in order to check them for accuracy…to the interpretive claims that are being made'; this means that researchers can involve research participants to check the accuracy of initial data gathered, including whether or not participants have more to add to the transcript of their interview(s) after they had opportunity to reflect at more length on the topic under investigation (Torrance, 2012, p. 114). Through this process, participants were able to read the initial transcript to check whether the transcript was consistent with what they had mentioned. Moreover, this case study used NVivo software to store the transcripts (Bergin, 2011). This ensured an audit trail because the NVivo software allows researchers to audit findings and guards against the excessive emphasis on rare findings that happen to suit the researcher's preferred arguments (Bassett et al., 2009; Bergin, 2011).

Data Analysis Stage

During the data analysis stage, relevant documents including reports, health statistics and minutes of meetings were gathered, analysed, compared and contrasted. As recommended by Yin (Yin, 2018), the triangulation process was found to be the best strategy to enhance the credibility of the case study. Similarly, Tobin and Begley (2004) argued that triangulation also serves as verification and offers completeness. Therefore, information that was gathered from this research was triangulated during the analysis stage.

Report Sharing Stage

The final report of this case study provides detailed and appropriate descriptions including the philosophical stance, approach, strategy, methods and findings. Interview guidelines and other relevant information were made available in both English and Bahasa Indonesia. This thick description allowed readers to travel metaphorically with the researcher back to the field and interact with the respondents. The readers may then gain a more in-depth understanding of the limitations, discussion, suggestions and the way forward from the research. It is hoped that after reading the research report, readers will be able to judge whether the research could be transferred to another similar context and event. Furthermore, it was envisioned that readers would be able to understand the phenomenon and be willing to translate the study's suggestions into targeted actions. Yin (2011) argued that a case study 'could be generalised to other situations through analytic (not statistical) generalisation' (p. 6).

5.4. PRESENTATION OF FINDINGS

It was decided that the findings of this study would be presented across three chapters that captured the main process of the phenomenon of integration of MRH into DRM in Indonesia, according to the selected case study of the 2013 eruption of Mount Sinabung. The presentation of these findings follows Yin's case study model that suggests 'assembling key events into a chronology/time-series analysis' (Yin, 2012, p.16). Findings from policy documents and interviews were analysed and different events that occurred since the eruption in 2013 until the relocation in the current site were summarised in infographics that are presented as part of the introduction to each findings chapter.

The application of the diagnostic event approach helped the presentation of the findings in a chronological way (past, present and future). Three overarching themes were developed and will be discussed in the following chapters. The first chapter, '*Looking back: Experiences of accessing MRH services during the 2013 eruption',* captures the starting point of the 2013 eruption of Mount Sinabung. The second chapter, *'Living in the moment: New lives in the relocation place – Current DRM practice'*, explains the situation in the current relocation place. After living in the temporary shelters for more than 1 year, those who opted for relocation in a new place in Siosar built by the government finally left the University of KabanJahe and moved to new houses in August 2015. The findings related to the experience of living in the new relocation place provide insights into the current concepts of disaster management practice in Indonesia. The final chapter, '*Looking forward: Perceptions future DRM practice'*, presents expectations concerning future DRM practice with better integration of MRH services.

In each theme, the findings are structured according to the units of analysis of this case study, which systematically progress through women, community leaders, health personnel and policymakers. This presentation is consistent with Yin's case study model that emphasises the importance of a well-structured research design (2018). Each quote is labelled as follows.

Category		Meaning
Unit of analysis	W	Woman
	CL	Community leader
	HP	Health personnel
	PM	Policymaker
Sex	M	Male
	F	Female
Type of interview	FGD	Focus group discussion
	II	Individual interview
Site	V	Village
	CHC	Community health centre/Puskesmas
	KJ	KabanJahe District
	Mdn	Medan, North Sumatera province
	Jkt	Jakarta, central government

Table 11: Label presentation for participants' quotes

Participants' quotes are anonymised to enhance the credibility of the study and inform rigour, respect ethical considerations and finally to demonstrate the real-life context of the case study (Yin, 2018). The use of direct quotations and original language followed by an English translation for some quotes aims to provide depth and enhance the description of the context of this case; as a result, they may not be grammatically correct, but it was deemed important to capture rich, thick descriptions.

Chapter Six: FINDINGS I
Looking back: Experiences of accessing and providing MRH services during the 2013 eruption

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Pregnancy: God, Baby, Beru Dayang, and Nature……..

Inside a womb, a baby talks with god… God says 'you are destined to be in this woman's womb'. God asks the mother, Beru Dayang (means women), to lactate, give food, bear, and teach the baby on how to be the friend of human and nature. Beru Dayang symbolises the spirit and is associated with rice and fertility. When there is no respect for Beru Dayang, then nature will get angry.

These days, nature has changed. Mount Sinabung keeps erupting. 'Look back, see now, and look front. Have we, people of Karo, changed the way we treat pregnant women?'

(A traditional belief from villagers around Mount Sinabung of Karo. A story from a community leader participant)

6.1. INTRODUCTION

This chapter presents the experiences of women, community leaders, health personnel and policymakers at the district, provincial and central levels regarding accessing and providing MRH services during the 2013 Mount Sinabung eruption. Their stories were gathered from FGDs and individual interviews. These findings relate to the research objective of examining experiences of accessing MRH services during a past disaster in Indonesia.

The time, place and events of this case study centre on the 2013 Mount Sinabung eruption. The figure below summarises the processes, time and events that occurred during the massive eruption in September 2013. These data were extracted from relevant documents and policies gathered during the literature review and fieldwork, as well as from the FGDs and individual interviews with women, community leaders, health personnel and policymakers.

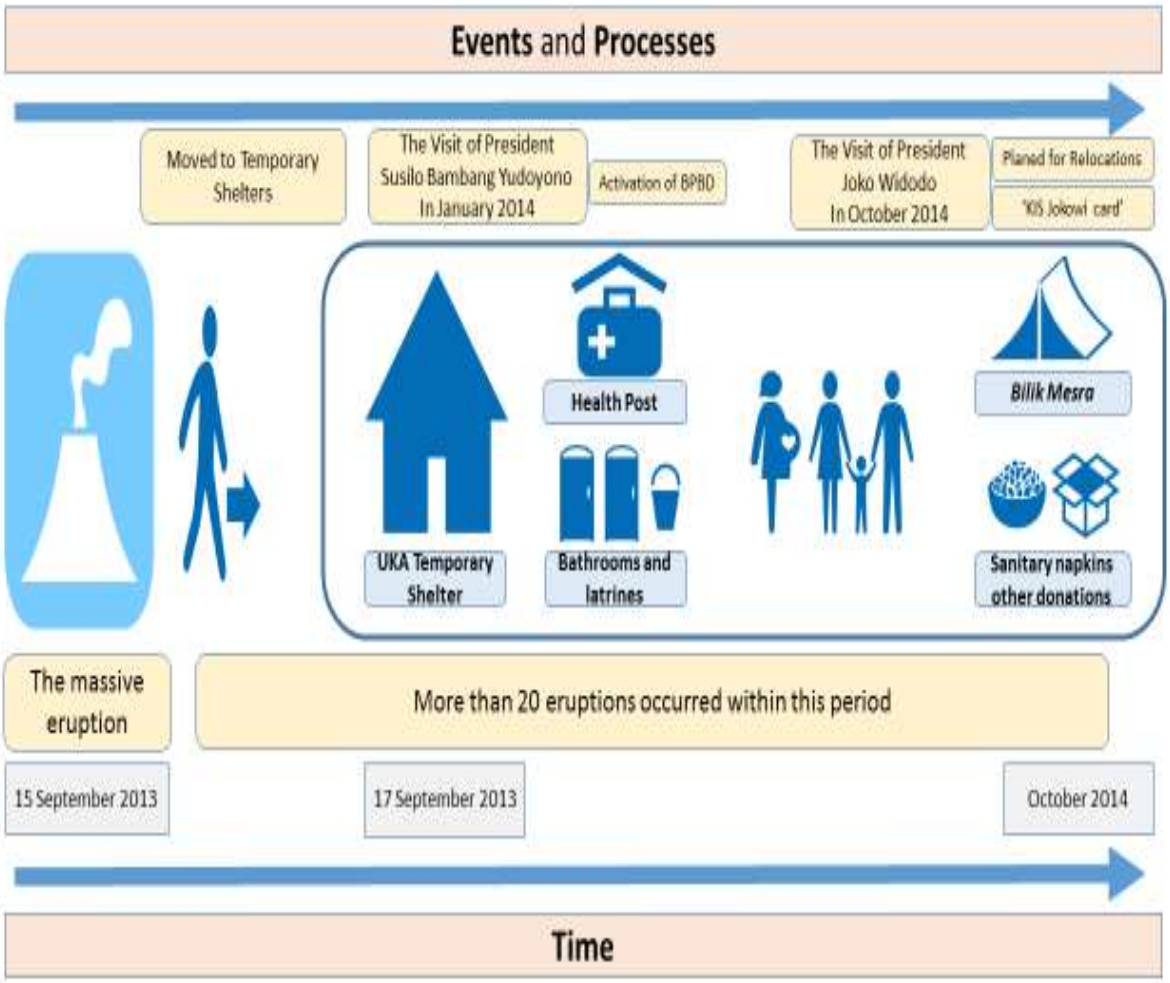

Figure 22: Chronology of the 2013 Mount Sinabung eruption

On 27 August 2010, Mount Sinabung erupted for the first time in the 20th century. This was the first eruption since 1600. Various smaller eruptions continued after the 2010 eruption, and a large eruption occurred on 15 September 2013. This began with ash, loud sound, fire, *hujan kerikil* (gravel) and series of earthquakes before the volcano blasted. Two days later another eruption occurred with *awan panas* (hot cloud) emitted from the top of Mount Sinabung; this killed at least 17 people who were trying to enter the Red Zone, which was the area most at risk for life-threatening hazards. The eruptions buried seven villages under the volcanic ash and displaced around 33,210 people, including women who were pregnant at that time. The Indonesian government immediately responded by relocating affected people in three main temporary shelters, which provided basic public facilities such as kitchens, bathrooms, toilets and health clinics.

In January 2014, President Susilo Bambang Yudhoyono visited Sinabung and met the affected people. After his visit, the *Badan Penanggulangan Bencana Daerah Kabupaten Karo* (district disaster management authority) was activated. In October 2014, the newly-elected President Joko Widodo visited Sinabung and developed a relocation plan. This visit resulted in the affected population receiving free-of-charge access to health services, including MRH services.

The following table presents findings framework using a thematic analysis approach (Braun & Clarke, 2013).

Key Nodes				Categories	Theme
Women	**Community Leaders**	**Health Personnel**	**Policymakers**		
Experiencing a tough time escaping while pregnant, having an increased level of readiness	Interpreting the meaning of the eruption	Scared and sad	Taking immediate actions, gaining people's trust	**Escaping from the eruption**	**Looking back: Experiences of accessing and providing MRH services during the 2013 eruption**
Feeling grateful but unsatisfied	Getting better but still very basic	Feeling grateful for the system in place but finding it stressful	Trying to provide everything they can	**Meeting MRH needs**	
Thankful for the immediate set up of temporary shelters but had some reservations	Better than 2010 but needs some improvement	Inappropriate facilities, acknowledging the help received from non-governmental organisations	Misunderstanding the purpose of facilities provided in the temporary shelter	**Living in the temporary shelter**	
Wishing to be relocated as soon as possible	Gaining disaster management knowledge, no specific services provided	Better coordination, realising the negative impact of the prolonged emergency phase	Getting better, addressing the 'missing period' between temporary shelters and moving to new homes	**Making efforts to improve disaster management**	

Table 12: Findings related to experiences of accessing and providing MRH services during the 2013 eruption

This chapter starts with participants' initial reactions during the 2013 eruption, and follows with experiences related to accessing MRH services at the onset of the disaster. It then describes

participants' experiences of living in temporary shelters and how this accommodation affected MRH needs. The final section of this chapter discusses how women, community leaders, health personnel and policymakers perceived the way in which the authorities managed the 2013 disaster.

6.2. ESCAPING FROM THE ERUPTION

All participants said that the 2013 event was the biggest eruption they had experienced. Some participants reported they were scared because of the huge scale of the eruption, whereas others felt less scared because of their experiences in previous eruptions.

Women: Experiencing a tough time escaping while pregnant, having an increased level of readiness

Most participating women indicated their experiences had been challenging because of difficulties such as needing to escape while pregnant and feeling a powerful need to protect their babies. One woman shared her experience of escaping her village while in late pregnancy, and said, '*I was 9 months pregnant. It was not easy to run while berbadan dua (pregnant) particularly during hamil tua (literally means late pregnancy). It was difficult to run as I felt that my body was very heavy*' (Women's FGD, Village 1). This woman experienced difficulty escaping from the eruption during pregnancy. During late pregnancy, women gain extra body weight; this limits their physical movement while escaping, which can add to women's vulnerability during a disaster.

Another woman from the same village shared her experience of being pregnant for the first time and having to escape during the eruption.

> *When the eruption occurred…that night…I was around 2–3 months pregnant…It was my first pregnancy and first experience of escaping…running…and panicking while pregnant…I could not run as fast as other people because I loved my baby so much…We loved the baby so much…I could not see properly. The volcanic ash was everywhere…some entered my eyes and I inhaled it…I remember stopping by at so many places just to catch my normal breath. We were in convoy…others tried to comfort me…We finally spent the night in a jambur before pursuing to Kantor Bupati…Later on, my eyes were red and painful…I was also coughing…* (Woman II, Village 1)

This woman described the complexity of the struggle faced by pregnant women when escaping from the eruption. She indicated how the disaster had increased the vulnerability of pregnant women through physical and emotional health implications, particularly among those who were in their first experience of being pregnant. The physical health implications included the ash that affected their vision and breathing, and the emotional implications included the feeling of being worried and trying to protect their babies as well as themselves. Efforts to support and protect the pregnant woman during the escape were also demonstrated by her community. This participant's story showed the importance of pregnancy for Karonese women. For them, women carry the future generation of their family and tribe. Therefore, even during the disaster, pregnant women and community members tried their best to protect their babies.

In contrast, other women described their experiences of the 2013 eruption as less fearful because of their previous experiences of the series of eruptions that started in 2010. One woman shared her personal experiences.

> *I was 6 months pregnant when the massive eruption occurred. On that night, I was having my tea when I heard people screaming. I stepped out from my house and saw fire on the top of the Mount…It looked scary but I got used to eruptions…I do not know why…[smiled]…My husband asked me to leave our house. After the 2010 experience, whenever Mount Sinabung batuk – batuk kecil (small 'coughing'/erupts in small scale), we were always ready to run…That night, we felt that that was a massive one, so we packed very fast…in 2 minutes, I asked my two sons to help packing whatever we can put in our bags…We jumped into our car and left the house. On our way, we passed by two elderly women and asked them to get into our car. We were in convoy with others and went to KabanJahe*. (Women's FGD, Village 2)

For this woman, the previous eruptions had made her aware of what to expect when a disaster occurred. Although the eruption created panic and disarray, this family understood that evacuation was something that would eventually happen. The increased level of readiness helped them to pack essential items quickly and help others during the escape. Not only were this family prepared, but their community was also prepared as people ran in convoy while escaping. For this participant, although she was pregnant, having her two children and husband around was seen as a factor that helped build her level of resilience. This demonstrated the differing levels of resilience among communities; in responding to the eruption, some people were traumatised and screamed, whereas others were able to think and manage to overcome the disaster.

Community leaders: Interpreting the meaning of the eruption

Community leader participants described their experiences in different ways. Some mentioned that they felt threatened by the scale of the eruption. In contrast, other community leaders stated that previous eruptions had made them more aware of what to do when an eruption occurred. Beliefs around the cause of the eruptions also came to play. Some participants interpreted the cause of the eruption as punishment from God, whereas others thought that it was nature's punishment for wrongdoings.

For many community leaders, the experiences during the 2013 eruption were complex. Although some community leaders had had prior similar experiences, the scale of this eruption was so large that it posed a clear threat to life. One community leader described the situation during the eruption.

> *That night, people were scared. The eruption turned to hujan kerikil (gravel). We ran while covering our head and eyes…I saw one motorbike that carried five passengers. [In] The 2010 eruption, people escaped and were scared because it was the first eruption where we did not know what to do…[In] The 2013 eruption, people escaped and were scared because it was massive…too scary*. (CL, M, FGD, Village 1)

The community leaders said that the eruption experience was scary because of the *hujan kerikil* (gravel). The experiences from the previous eruptions made the community more aware of the associated risks, hazards and consequences, such as gravel from the eruption leading to casualties. However, the realisation and awareness of the risks associated with the gravel raining down from the eruption resulted in chaos and panic when people were trying to escape their villages. Fleeing one set of risks also resulted in a new set of risks (escaping in the dark) and compromised their safety. People's previous experiences and knowledge influenced their interpretations, logic and decision making, and this was manifested in the way people escaped. Another community leader added:

> *It was such a massive one! While escaping, I saw people, including women, cried and screamed...they were scared and traumatised from the previous eruptions…Even me, I already ran quite far with my family, and later on, I remembered my mother in law that was left behind…I only remembered her when we reached a safe place…When we were quite far from our village, when we felt exhausted and considered the place relatively safe, then we started to look for our families…While worrying about my mother in law, I heard that another family was also looking for their member who has a mental problem*

> *who was also left behind. We were scared to return back...people were crying…[looked down on the floor]…very sad experience*… (CL, F, II, Village 2)

This participant's story added to the examples of how the scale of a disaster can influence people's logic and decision making. The disaster was so shocking that often people were focused on their immediate safety and those around them, resulting in other people being left behind in the chaos. Furthermore, similar to the women participants, community leaders noted how the scale of the eruptions traumatised people, which manifested in emotional reactions (e.g. crying, screaming and emotional difficulties) coloured by fear for and guilt about those left behind, particularly after reaching a place considered relatively safe.

The eruption was interpreted differently by other community leaders, with a few participants stating that the previous eruptions had taught the communities to look for impending signs. This was clearly explained by one participant.

> *Months before the massive eruption, we experienced unusual things, such as hearing loud sounds from the top of Mount Sinabung and also from under the soil when we went to our farms…Also, the night when the eruption occurred, there were earthquakes that happened since [the] morning…I felt strong shakes at least three times since [the] afternoon. Since the first feeling, I knew that something might happen…Mount Sinabung erupting is very unusual. We were told by volcanic experts who visited our place after the 2010 eruption that before an eruption we would feel hot as the temperature increases…might see animals from the mount coming down to our farm and village…also gagal panen (crop failure)…but we did not experience any of them.* (CL, M, II, Village 1)

That participant indicated that he could read the situation before the eruption occurred. He experienced unusual signs, including loud sounds that came from the top of Mount Sinabung and under the soil, as well as a series of earthquakes that signalled that a natural disaster was bound to arise. For this community leader, sensing the situation drew on daily experience rather than relying on expert advice about what could happen before a disaster. This showed how experience influenced logic and the knowledge of the community to interpret a pending disaster.

Although some community leaders were attuned to the changing signs in the natural environment and drew on their experience and logic, other community leaders interpreted the 2013 eruption as a test from God. One participant said:

> *For me, the 2013 eruption was a cobaan Tuhan (a test from God). It was sad to see not many people coming to the mosque praying during Ramadhan (fasting period)…people were busy with their farms and doing business. The volcanic ash from the first eruption in 2010 made our soil even more fertile…after that many people came and bought land around Mount Sinabung and planted coffee, oranges and did other business…Instead of praising God, they forgot…* (CL, M, II, Village 2)

That participant's story showed how religious beliefs appeared to play an important role in society, especially for rural communities. The participant perceived the eruption as a consequence of people's behaviour in that they prioritised business interests over their religious duties. That participant also noted a positive benefit, such as the volcanic ash that made the soil even more fertile therefore helping increase agricultural productivity and the local economy. However, the participant argued that such economic improvement was not followed by appreciation and worship of God. This highlighted the complex interplay between religion and people.

Moreover, other participants linked the eruption to local culture and beliefs. One community leader who was a member of the *Pembinaan Kesejahteraan Keluarga* (village women's group) interpreted the event as follows.

> *As a member of a women's group, there were numbers of women who came to me. They came because they had problems…beaten by their husbands...Karo women are diligent. We go to the farm every day and plant food for our families…Why can't they respect women since they are the ones who prepare food and deliver babies?...So, we should accept when Mount Sinabung is angry with us.* (CL, F, II, Village 2)

This woman interpreted the eruption as karma, as part of the consequences of the community not respecting women. This woman argued that if society continued to not value the important role that women have in society (e.g. pregnancy, bearing, delivering and rearing children as well as taking care of their families) then they should not be surprised that Mount Sinabung's anger was punishment for the disrespectful behaviour towards women.

Health personnel: Scared and sad

Many health personnel described the experiences of the 2013 eruption as 'life or death experiences'. The event tested their integrity, professionalism and humanity as health personnel,

whether they were ensuring safe deliveries, administering the continuation of MRH services or saving the lives of loved ones.

Some health personnel were on duty and helping pregnant women deliver when the 2013 eruption occurred. The 2013 event was not only frightening and caused profound disruption to MRH services, but also resulted in tragedies. A midwife shared her story of assisting a delivery while Mount Sinabung erupted.

> *When Sinabung erupted…again…it was massive…scary…I saw the fire from the top of Mount Sinabung…That night, we were having a pregnant woman who was about to deliver her baby. While other people were running to save their lives, we teamed up and tried our best to save the mother and her baby…We prayed…nothing we could do…The mobile network had gone, rain dust and gravel as well as flares from Mount Sinabung, and no electricity. The mother finally delivered safely. We waited for an additional 4 hours to observe the mother and the baby…We referred them to KabanJahe…that was in between life or death experience.* (HP, F, FGD, CHC 2)

That midwife expressed the situation as an '*in between life or death experience*' and captured the dilemma of being a health service provider mandated to provide MRH services as well as a member of the community who also had family members affected by the disaster. For health personnel, being caught up in the situation of delivering a baby during the disaster meant they had to ensure safe delivery by working in low-or no resource settings where the electricity and other facilities were damaged by the eruption, which further added to the stress of the situation. This midwife's story showed that all health personnel working in a disaster setting require competencies and abilities to manage emotions and logic, and make decisions, as well as having the skills to still perform and deliver services, even when facilities are limited. Furthermore, being a health service provider assigned to a disaster-prone area requires a certain level of readiness and resilience to still be able to provide MRH services at the time they and their families may also be affected by disasters.

For some health personnel, the 2013 eruption was frightening because of associated tragedies as they witnessed the struggles of pregnant women trying to escape. One midwife shared a sad story of a pregnant woman who passed away after she became too tired from running. She shared that:

> *Not only scary but sad…[silent]…There was one pregnant woman who passed away because she was exhausted running. When we found out that she was already sick, we then referred her to Kabanjahe General Hospital. Unfortunately, the baby had already died, Kematian Janin Dalam Kandungan (dead foetus inside the womb). The following week after the delivery, the mother was dead.* (HP, F, FGD, CHC 2)

For health personnel, the eruption affected physical and mental health, which escalated the vulnerability of pregnant women and their unborn children. The maternal death and stillbirth case described above showed how the eruption was considered the indirect cause of these deaths. The woman's physical limitations while attempting to escape resulted in physical exhaustion and impacted her pregnancy. Another facet of this story showed that when everything was in chaos and resources were limited, health personnel could not provide maximum help, as the situation was beyond their control.

Moreover, for some health personnel, the disaster not only disrupted lives but also health infrastructure and facilities. This was clearly explained by a participant, who said:

> *The following day, I came to our Puskesmas, I felt scared and sad when I found out that the entire building was covered with volcanic ash. The hujan kerikil (gravel) destroyed some part of [the] Puskesmas building including the roof, ceiling, filing cabinets where we kept medical records, pharmacy where we kept our medicines and vaccines.* (HP, F, II, CHC 1)

This narrative showed that part of the fear among health personnel was the realisation that they could not care for all mothers and provide proper MRH services at a time when there was an even a greater need for MRH services. It demonstrated how the entire health system had been affected, leaving little backup to deal with the crisis. Their fear was for the immediate situation, but also related to the realisation of the magnitude of the implications for wider health service delivery.

Finally, for some of the health staff who resided in villages that were not directly destroyed by the eruption, the 2013 eruption was another opportunity to test their logic and ask for God's protection. Learning from the previous eruptions, these participants knew and became aware of the direction of volcanic ash from Mount Sinabung. One participant said:

> *When the eruption occurred, our village had syukuran desa (village thanksgiving party). As soon as the party finished and people returned home, the big eruption occurred. I was scared...While seeing other people I screamed, I was just staying*

> *home and prayed...I knew that God would save us. From previous eruptions, we learnt and knew that the volcanic ash went to arah sebelah (the opposite direction) and did not come to our village.* (HP, F, II, CHC 2)

This participant's belief system helped her to feel more in control in the face of the disaster. Prayer appeared to be a way for some residents to cope with the disaster. Religious beliefs may therefore play a vital role in managing a disaster situation. Similar to some of the community leaders' statements, the experiences of some health personnel showed how the community relied on their beliefs but also had intuitions regarding the 2013 disaster based on learning from the previous experiences. Not only were they in tune with nature (e.g. being able to read the direction of volcanic ash), but religious beliefs and practices (e.g. praying) gave them a sense of security and protection and played a vital role in how they responded to the disaster situation.

Policymakers: Taking immediate actions, gaining people's trust

Policymakers described their experiences in different ways. For many, taking prompt action was seen as a reaction to protect affected people because of the scale of the disaster, whereas others interpreted those prompt measures as a way to regain people's trust after the previous slow response to the 2010 eruption.

For most policymakers, the scale of the disaster required them to take much-needed immediate action. One policymaker said, '*It was massive! We could not wait any longer…The 32 affected villages from four sub-districts were immediately relocated in various temporary shelters'* (PM, F, Mdn, #3). Similarly, another policymaker stated, '*We contacted our office in Medan…The following day, we received information that our personnel were already on the ground providing support. We worked closely with military personnel…'* (PM, M, Jkt, #2).

These two policymakers described feeling a sense of urgency due to the scale of the disaster. The first policymaker explained that the disaster heightened the attention of authorities regarding taking prompt action to relocate the affected people to temporary shelters. The second policymaker stated that the event required them to immediately establish communication, coordination and reporting systems from the central, provincial and district levels, as well as inter- and intra-sector communication. The driving force behind responding with urgency to the large scale of the disaster was concerns around saving the lives of affected people. There were concerns that if the response was slow, then the affected populations from the 32 affected villages in four sub-districts would face unwanted consequences as a result of the disaster. These

policymakers acknowledged the importance of everyone—from military to social welfare and health sector—working together to save the lives of affected people.

For some policymakers, the immediate response to the eruption was seen from a different perspective. For example:

> *We learned a lot from the previous eruptions…we became more responsive. We wanted to regain people's trust after the 2010 emergency response that was not too good. During 2010, when the first eruption happened, people in Karo were upset to the Bupati (head of district). He did not know how to respond to the first eruption. Instead of listening to the affected people, he asked them to return to their village. As soon as those people reached their villages, another eruption happened again. He (the head of district) lost face in front of his people…that's why people from Jakarta and Medan came down during the 2013 eruption.* (PM, F, Mdn, #3)

That policymaker described the 2013 eruption as an opportunity for policymakers to improve their disaster management mechanisms and systems after exposure to the first eruption in 2010. This demonstrated that skills and knowledge related to disaster management were built through experiencing previous disasters. As part of lessons learned, authorities from central and provincial levels were also involved during the response.

The story of how the *Bupati* (head of district) lost face during the first eruption in 2010 by misleading the response and the subsequent loss of trust by the community was repeated by other policymaker participants. Similar to other Asian countries, the leadership style in Indonesia is very much influenced by the culture of the 'leader is always correct'. This applies during managing a disaster through its incident command system that uses a top-down approach. From the stories shared by participants, it was clear how policymakers realised that the affected people were disappointed with the weak leadership during the 2010 event; therefore, they would like to 'correct' the management during the 2013 event. This demonstrated that an actual disaster was an arena to test and improve the capacity of authorities in terms of leadership, coordination and collaboration related to preparedness and response.

6.3. MEETING MRH NEEDS

Experiences of accessing and providing MRH services in the initial stage of the disaster were described in different ways by the participating women, community leaders, health personnel and policymakers. Some participants felt grateful for the availability of MRH services in temporary shelters and compared them with the services provided in the 2010 emergency response. In contrast, others raised issues related to the supplies and facilities available in the health clinics and described them as basic.

Women: Feeling grateful but unsatisfied

Women participants perceived the provision of MRH services in the temporary shelters in different ways. Some were grateful for the immediate provision of MRH services, whereas others shared unpleasant experiences. For most women participants, gratitude when accessing MRH services during the emergency response related to free services and donations of basic items that were distributed immediately after their displacement. One woman said, '*I am thankful that the services were provided free-of-charge…compared to the 2010 eruption, I paid a lot of money when I delivered my first baby*' (Woman, II, Village 1). As the disaster had resulted in women leaving their villages with nothing, the feeling of being grateful was linked to the free services. That participant compared the system to the provision of MRH services during the 2010 event, where these services were not free at a time when people had nothing. In a normal setting, although the Government of Indonesia has been making effort to provide free health services to its citizens through an insurance scheme, not all services are provided free-of-charge. The disaster increased the challenges of people in accessing MRH services, because people lost personal belongings as an impact of the event, which impacted affordability of and accessibility to MRH services. Having free health services decreased both barriers and challenges for women during a time when there was an increased need for health services.

Furthermore, another participant stated:

> *Unlike the 2010 eruption, during the 2013 response, the health clinic distributed blankets, clothes and sarongs (garment consisting of a long piece of cloth worn wrapped around the body)…I could not stop praising Allah (God). They were very useful as during the initial days, we did not have anything.* (Woman, II, Village 1)

This woman praised Allah (God) because the provision of MRH services came with the distribution of essential items, as these were needed during the initial days in temporary shelters.

Because of the scale of the disaster, they did not have time to bring essential items with them when escaping. For these participants, the availability of basic items during displacement was linked with their belief that God, through the authorities, would provide them with basic things, even during the disaster. A *sarong* (garment consisting of a long piece of cloth worn wrapped around the body), was mentioned by most women participants as a basic item that was distributed during the initial response phase. A *sarong* is a multi-purpose item that is used in many ways by Indonesians. It can be worn for protection, including covering the body when bathing in public places (i.e. rivers, public bathrooms), while sleeping and even to wrap a newborn baby. In addition, for Muslim people, *sarong* means *'sacral'* as it represents cleanliness, as it is not only used as a daily item but also for praying. The Government of Indonesia developed packages called 'Dignity Kits' and 'Maternity Kits' that contained basic items such as sarongs, sanitary napkins, underwear, clothes and blankets to be distributed to affected people during disasters (Indonesia MoH, 2007, 2017).

For some women, their experiences of accessing MRH services were less supportive than those described by others. They described their experiences as unsatisfactory because medicines provided were basic (meaning generic rather than branded drugs, as normally people perceive branded drugs are better), midwives were in a rush, poor registration systems and unavailability of referrals. One woman said:

> *I went to check my pregnancy several times…more than five times…The bidan (midwife) touched my tummy and asked what I felt. But every time I visited the clinic, the medicines were itu-itu aja dan generik (monotonous and very basic). I knew what medicines to get every time I visited the clinic.* (Woman, II, Village 1)

This woman expressed her experience as unsatisfactory because the medicines provided were basic, although she herself had made efforts to check her pregnancy. For the majority of Indonesians, especially those in rural areas, people's perceptions of health services are geared towards curative measures, not prevention. Therefore, when they visit health clinics—even during antenatal care that is part of preventive measures—they expect to be given medicines. Not being provided with interventions may therefore be interpreted as a service lacking quality and not providing a good standard of care.

Another complaint was related to the provision of family planning services as part of MRH care. Some women shared concerns about the behaviour of the health personnel providing contraception. One said, '*After delivering my baby, I went for the implant. When a health staff inserted an implant into my arm it was very scary and painful. She was rushing'* (Woman, II, Village 2). For that participant, her experience when accessing family planning services was unpleasant because the health staff provided the service in a rush. This showed how working in a low-resource environment (i.e. few health resources in a disaster setting), had negatively impacted the quality of services, including MRH and family planning.

Furthermore, a few women participants shared their observations related to the recording system and confidentiality at the clinic in temporary shelters. For example:

> *I saw they just wrote on a paper while asking my name and complaints. They put the paper inside the drawer, but surprisingly, every time I came back, they kept asking my name and wrote on a new blank white paper. I had to re-explain...I am afraid other people will read my paper. I was not given Buku KIA (Maternal and Child Health Book).* (Woman, II, Village 1)

That woman shared her experiences while accessing MRH services and described that health professionals had to resort to pen-and-paper with non-existent filing systems. The low resource setting during the disaster had an impact on mothers, as they were repeatedly being asked the same questions. This indicated there were issues related to documentation, including unavailability of *Buku KIA* that is used to record the health-related histories of mothers and their babies in a normal setting (Indonesia MoH, 2016) . Furthermore, the lack of secure filing systems meant that many women had concerns around confidentiality.

Finally, some women participants also shared their experiences related to the availability of stand-by ambulance at the temporary shelter. One woman participant stated:

> *I was sent to KabanJahe General Hospital and delivered safely there. I remembered my husband and relatives hired a car to drop me at the hospital. No ambulance in UKA (temporary shelter). Luckily, it was during the daytime, and there were many cars on the road. Imagine if this was in the middle of the night, finding a car must be difficult*. (Woman, II, Village 1)

For this woman, the unavailability of transportation (i.e. an ambulance) to ensure the referral mechanism was perceived as placing pregnant women in a more dangerous situation. Even in a

disaster setting, there was an expectation that provision of MRH services in emergencies would require standby ambulances to facilitate referral mechanisms to a higher level of health facility to ensure safe deliveries. Finally, it highlighted the role that husbands and families played to help to ensure safe deliveries for pregnant women. The role of the family in safeguarding pregnant women and ensuring safe deliveries was also demonstrated in that narrative.

Community leaders: Getting better but still very basic

Community leader participants also described the provision of MRH services in different ways. Some acknowledged the efforts to meet the MRH needs in the temporary shelters, whereas others raised concerns related to the quality of these services. For most community leaders, experiences related to the provision of MRH services were described as getting better compared with services provided in the previous disaster response. This was attributed to the immediate set up of clinics at the temporary shelters, and immediate assignment of health service providers. One of the community leaders stated that:

> *As soon as we moved into Universiti Kabanjahe (UKA) temporary shelter, they set up a clinic inside the temporary shelter...There were midwives there, so we asked people, including pregnant women, to visit the clinic. I think the services were better compared to 2010…there was a system in place…Of course, 2013 was not perfect.* (CL, M, II, Village 2)

Participants acknowledged efforts made by the government to improve the provision of MRH services during a disaster response. The above participant drew a comparison between the 2013 and 2010 responses, and described '*a system in place*' with the set up of a clinic inside the temporary shelter and the placement of health service providers that enabled the provision of MRH services for affected people. Although efforts were made and better than the previous disaster, the participant noted that *'2013 was not perfect*', which indicated there was room for improvement.

Despite the acknowledgement of the efforts that were seen to be improved, some community leaders described the provision of MRH services as very basic because of the limited capacity to offer a range of MRH services. This was perceived as resulting in services lacking quality, and issues related to recording and reporting. One community leader said:

> *I could not expect more. It was during the emergency setting. The services provided at the so-called health clinic inside the UKA temporary shelter were*

> *very basic. The Government created that right after we moved in…At least, I got checked and got medicines. I saw that people were sent to Evarina Hospital for further treatment*. (CL, F, II, Village 1)

That community leader presented the perception of lowering expectations when accessing MRH services given the realisation of being in a disaster setting. Similar to some of the women participants who also experienced unsatisfactory provision of MRH services, some community leaders indicated limitations in the health clinics at the temporary shelters, with inadequate equipment, medicines and supplies that resulted in 'unusual' referral cases. In a normal setting, referrals are intended for severe cases and those with complications, but in a low resource setting, the margin of referrals changed because of limited capacity at the primary healthcare level.

Similar to women participants, some community leaders raised issues related to the unavailability of standby ambulances in the temporary shelters. One community leader said:

> *The ambulance was not on standby…the KabanJahe General Hospital…around 5 kilo…5 kilometres from our place…[silent]…We need to phone the hospital, and if the case was urgent, then they will come straight away to our place*. (CL, M, FGD, Village 2)

Some community leaders stated there was a system in place, as described in the above statement; however, the provision of MRH services was perceived as being incomplete because there were no standby ambulances at the clinics in the temporary shelters. This was echoed in other participants' perceptions that the 2013 response was 'not perfect' as no proper referral mechanism for MRH cases was in place.

Finally, for a few community leaders, accessing MRH services left them with an issue related to how health service providers keep the medical records. One community leader stated:

> *I am not sure whether they use a special buku pencatatan (recording book) to document all patients…They were only writing on loose paper when asking questions to me. The following days I saw those papers inside used boxes…This made me upset because anybody can read those papers, including mine*. (CL, M, II, Village 1)

This statement demonstrated the feeling of distrust related to the way health service providers managed confidential information that was provided by patients during consultations. Similar to

comments made by women participants, this indicated poor reporting and documentation systems in the health clinics because of unavailability of recording books and secure places (i.e. filing cabinets) to keep medical records.

Health personnel: Feeling grateful for the system in place but finding it stressful

Health personnel participants shared their experiences while providing MRH services in different ways. Some mentioned that they felt grateful for having a system in place, whereas others felt overburdened. Most health personnel participants described their experiences during the provision of MRH services as happy because of the better functioning health delivery system when compared with the 2010 response. These improvements included having a rotation schedule and making time for interaction between health personnel and affected people. One midwife stated:

> *In general, I am happy because we were able to help people in a better way compared to the 2010 response. During the 2013 response, we had a system in place. We were rotated on duties, we had time to rest and recharge. On the other hand, people were able to get standby midwives that were available during day and night times. During the 2010 response, it was terrible…I was very exhausted, as there was no one to replace and help me provide services. My family were also affected, so I was tired, sad and in [a] dilemma*. (HP, W, II, CHC1).

That midwife indicated a feeling of satisfaction with the services provided by health personnel because of the availability of a 'system in place'. This system resulted in the availability of 24/7 MRH services facilitated by rotation among health service providers. The rotation allowed them to rest and maintained some kind of work-life balance by having time to be with and take care of their families. Similarly, another midwife mentioned:

> *I felt, in that difficult condition, we tried our best and I felt happy although tired…We made sure obstetricians also visited the temporary shelters, although it was not regular…we also visited temporary shelters to make sure all children were immunised and educated lactating women to breastfeed their babies…* (HP, F, II, CHC2)

These participants were committed to providing MRH services for the affected population by making them available inside clinics and actively reaching affected people by going out from clinics (home visits). This indicated commitment to the work they were mandated to deliver, even

in a resource-limited situation. This showed there were efforts to increase coverage and ensure that MRH needs among affected people were met.

In comparison, other health personnel described their experiences as 'stressful' because of the demand to perform different capacities with limited resources, poor settings that led to privacy issues, family members also being affected and unreadiness to work in a disaster setting. One village midwife stated:

> *We were overburdened…Despite so many responsibilities to deliver, we provided family planning services, including contraceptive commodities, to the affected people. There were times where we ran out of contraceptives, although we had submitted reports and requests for additional commodities.* (HP, F, FGD, CHC1)

This showed the excessive burden, responsibilities and effort of trying to give their best as experienced by health personnel during the disaster. They were expected to save lives and perform a variety of MRH services, including family planning care, reporting and logistics. Despite their integrity and dedication to serving affected people, some health personnel faced the reality that they had to provide MRH services with limited resources.

This linked the reality with the previous comments from women participants that '*every time I visited the clinic, the medicines were itu-itu aja dan generik (monotonous and very basic)*' (Woman, II, Village 1), and '*After delivering my baby, I went for the implant. When a health staff inserted an implant into my arm it was very scary and painful. She was rushing'* (Woman, II, Village 2). The excessive burden on and responsibilities of health personnel to provide MRH services in a limited infrastructure with poor supplies and insufficient medicines hampered the quality of MRH services, resulting in traumatic experiences that affected both health users' and health providers' level of satisfaction. Similarly, another participant shared that:

> *We were not able to provide the full set of 7 – Ts for ANC (antenatal care)…I was not able to provide tetanus toxoid injections because they were not available…I could not open the clothes of a pregnant woman…it was an open clinic…She would be shy if I opened her clothes in front of the public. I then referred her to the nearest Puskesmas.* (HP, F, FGD, CHC1)

That midwife described her experience as frustrating and stressful because of her inability to perform MRH services adequately due to unavailability of resources and confidentiality issues. It

showed the working environment that was not supported by proper medicines, supplies and facilities. In addition, the open setting of the health clinic placed health personnel in a challenging situation between providing quality MRH services and respecting the privacy of patients. Furthermore, another midwife said, *'My family and I were also affected. We were scared...[looked down at the floor]…We stayed at the temporary shelter as well. I tried to help others and at the same time trying my best for the family'* (HP, F, II, CHC1). That midwife described the feeling of a dilemma between providing MRH to other affected populations and taking care of family members. This represented the feeling of worrying about family, and showed that midwives had two roles in society: first, as health staff to provide MRH services, and second as a woman also taking care of her own family.

Lastly, another village midwife voiced, '*I have never thought of being assigned in a disaster-prone area like Sinabung. We did not learn how to provide services during a disaster. I have not attended any of those courses…*' (HP, F, II, CHC1). For that village midwife, the experience of providing MRH services was described as stressful because she was not ready and not equipped with knowledge and skills to provide the services in a crisis setting. For health personnel, realising the limitations and lack of readiness in being able to meet the MRH needs of the affected population during a disaster showed different expertise but also gaps in terms of skills and knowledge about disaster management among health personnel.

Policymakers: Trying to provide everything they can

Policymaker participants also described their experiences in different ways. Some thought there was a good system to ensure the provision of MRH services, whereas others felt the disaster added challenges to implementing the existing annual work plan. For most policymaker participants, experiences while providing MRH services during the eruption were described as better than the 2010 event because the authorities were able to allocate human resources during the initial phase of displacement, as well as provide essential supplies and coordinate the responses. One policymaker said:

> *Village midwives stayed with their affected communities and helped provide MRH services in clinics at temporary shelters…Puskesmas staff were also on standby at their duty stations in case of referrals…We tried our best at that time…We worked with health authorities and made sure that pregnant women who wanted to deliver were sent as early as possible so that they could deliver safely.* (PM, M, KJ, #1)

That policymaker participant showed that despite limited circumstances as a result of the disaster, they tried to provide health providers in temporary shelters to meet the MRH needs of the affected population during the initial stage of displacement. Similarly, another policymaker added:

> *We provided everything…it was nearly complete…contraceptives including pills, condoms, implants and IUDs were available. Our Team using MOYAN – Mobil Layanan (mobile ambulance) visited temporary shelters regularly…we had a schedule…I coordinated with my personnel in Karo district to make sure family planning services were given to the affected population.* (PM, F, Mdn, #5)

That policymaker indicated the feeling of confidence with the response during the 2013 emergency response. It showed increased commitment to coordinate the response work. The availability of various types of contraceptives in temporary shelters also indicated improvement.

In contrast, other policymaker participants described the experiences during providing MRH services during the eruption as being very hectic because of the responsibility to implement the annual plan and respond to a disaster. One policymaker stated:

> *It was very hectic…while we were implementing our yearly plan, Mount Sinabung batuk keras (erupted massively/large scale of eruption). I had to divide my team. One to implement the yearly plan, another team to focus on disaster response. Our health personnel is quite small at that time. I could not count how many times my team and I skipped our lunches and dinners…it was a busy period.* (PM, M, Mdn, #1)

This participant described issues related to business continuity, particularly how the disaster had disrupted normal routines. The large scale of the disaster had forced them to respond despite having other responsibilities to implement the regular programme. That participant perceived this as an overwhelming experience. This showed that in a developing country such as Indonesia, human resources for health are limited even during a normal period, and experiencing a disaster added to the burden for policymakers. Finally, similar to some of health service providers on the ground who tried their best to provide MRH services, policymakers also sacrificed their own needs and tried their best to ensure business continuity and provide life-saving MRH services to affected people.

6.4. LIVING IN THE TEMPORARY SHELTERS

The infrastructure and facilities in the temporary shelters affected the provision of MRH services. Women, community leaders, health personnel and policymakers described their experiences of living in the temporary shelters in different ways. Some participants felt grateful for the immediate set up of temporary shelters that gave them a place to stay during the displacement period, whereas others shared concerns related to privacy, hygiene, sanitation and security. Although some participants acknowledged the support provided by non-governmental organisations to improve the living situation in the temporary shelters, others contended that the infrastructure inside the temporary shelters was not designed according to the local context.

Women: Thankful for the immediate set up of temporary shelters but had some reservations

Women participants had different experiences and perceptions regarding the situation in temporary shelters. Although some raised concerns related to hygiene, sanitation and safety, others felt grateful for having temporary shelter. For most women participants, the prompt provision of shelters in the initial days of displacement meant they felt grateful to the military and government personnel for providing them with such accommodation immediately after the eruption. One mentioned:

> *The first days in UKA, everything was not stable. Military people were helping us with setting up the shelter, building toilets and bathrooms, and distributing blankets…the military and people from Kabupaten (district authority) were very prompt…* (Woman, II, Village 1)

This showed the feeling of acknowledging the military and local government's efforts to protect the affected people by immediately provide temporary shelter and distribute basic needs. The temporary shelters were built and equipped with basic facilities that included toilets and bathrooms. The participant used '*very prompt'* to emphasise the immediate action taken by authorities to manage the disaster.

Although many women were grateful for the temporary shelters, others described the experiences of living in these temporary shelters as tough because of the minimum setup that affected their MRH needs. One woman said, '*It was an open space…no privacy…I feel shy to breastfeed because people looked at me*' (Woman, II, Village 2). This highlighted the feeling of insecurity in the temporary shelters. The open space setting compromised the ability of lactating mothers to feed their babies. Inability to breastfeed may result in nutrition and health issues for

babies and their mothers. Lactating mothers may also experience mental health and MRH issues, as exclusive breastfeeding is a birth control method to prevent unwanted pregnancy. Moreover, babies may face malnutrition that would affect their growth. In the disaster setting, ensuring an environment that allows privacy for lactating mothers to breastfeed their babies is paramount. In the local context, showing breasts in public, is considered inappropriate even when breastfeeding babies. In a normal setting, lactating women find a space/corner to breastfeed their babies where people would not be able to see, or if they have to do it in public, they cover the breast area with cloth.

Furthermore, in addition to issues related to privacy, some women also raised issues related to the public facilities in the temporary shelters. Although toilets and bathroom facilities were provided in the temporary shelters, some women described these facilities as scary because of lack of cleanliness, distance and lack of proper lighting. For example:

> *There were more than 10 latrines and bathrooms built in UKA. They were not very pleasant to use. Very dirty. Besides, they were built quite far from our place. During the night, it was very dark as there was no light around. I was so scared to use the toilet. I was afraid if a man approached me.* (Woman, FGD, Village 1)

That woman highlighted the feeling of insecurity among the women when using these facilities, particularly during the night time. The poor setup of facilities in the temporary shelters created security and protection issues, and participants expressed worry about being harassed by men. This showed an increased level of vulnerability among women in displaced settings.

Community leaders: Better than 2010 but needs some improvement

Community leader participants reported different experiences of living in temporary shelters. Some talked about feeling grateful and others noted the lack of privacy in and appropriateness of the temporary shelters. Most community leader participants described their experiences of living in temporary shelters as much better compared with the living conditions they were provided in the aftermath of the 2010 eruption. For example:

> *The 2013 response, we stayed in temporary shelters. It was much better compared to the first eruption in 2010 where we (communities) were separated, we were everywhere, trying to find a place to sit, not event to sleep…imagine…Some were in jambur, some were in mosques, some were in churches, some were in their relatives' houses, we were scattered…During 2013, we were in one place.* (CL, M, II, Village 1)

This showed a feeling of appreciation for the efforts of the authorities to protect and keep families and communities together in the same location. It also demonstrated willingness from the authorities to learn and improve from the previous responses, which resulted in creating temporary shelters for the affected population that ensured they were together during displacement.

Conversely, for other community leader participants, the setup of the temporary shelters was far from ideal. They described their experience as being very difficult because the open space setting of temporary shelters resulted in the feeling of discomfort, particularly during night time. One mentioned that, '*There was no partition. Very noisy even during night time. Very difficult to rest*' (CL, F, II, Village 2). This highlighted the feeling of a troublesome situation in the temporary shelters due to the unavailability of dividers. Similar to experiences from some of women participants, community leaders described the experience as unpleasant because there was no privacy. As noted previously, some women made comments such as, '*It was an open space…no privacy…I feel shy to breastfeed because people looked at me*' (Woman, II, Village 2). The negative impact of having an open space set up in the temporary shelters whereby occupants experienced loud noises even during night time affected their quality of sleep, which in turn can lead to stress, lack of sleep and potentially adverse health outcomes, including challenges for breastfeeding among lactating mothers.

Health personnel: Inappropriate facilities, acknowledging the help received from non-governmental organisations

For some health personnel participants, the living situation in the temporary shelters was described as 'good' because of additional support provided by non-governmental organisations and collaboration among stakeholders to meet the basic hygiene and sanitation needs of the affected population. For example:

> *The Indonesian Red Cross supplied clean water at UKA temporary shelter regularly. Good effort. That was very helpful, although I witnessed many times they ran out of the water...In addition, women received sanitary napkins to use during their menstruation periods. However, I saw used sanitary napkins were everywhere. Our Puskesmas visited the place and educated the people to maintain their hygiene and sanitation. DINKES implemented the Perilaku Hidup Bersih dan Sehat (Clean and Healthy Behaviour) programme…* (HP, M, II, CHC1).

This captured the feeling of acknowledging the contributions of non-governmental organisations during the emergency response to meet the basic needs of the affected population, including meeting the unique needs of women of reproductive age during menstruation. Women continue their normal menstruation even during disasters; therefore, meeting their demand for sanitary supplies is paramount. Furthermore, participants elaborated on how local health authorities worked together with non-governmental organisations to educate people on the importance of maintaining hygiene and sanitation even during a disaster period.

In contrast, other health personnel described the provision of *bilik mesra* (a room for couples to meet and have sexual intercourse) in the temporary shelter as sad, because it was not designed according to the local context. For example:

> *The bilik mesra was made from a small tent and put a big poster in front of it. Children used to call it a tenda goyang (shaking tent). They cut the tarpaulin so that they could peek at those inside the tent…Who wants to be a clown? No one used it. Couples had sex under blankets during night time. Sadly, some other couples had to use their living allowance just to pay for a room in the nearest hotel to have sexual activity…Living in a temporary shelter for long time, of course they need sex…[smiled]…* (HP, F, II, CHC1)

This participant described the set up of *bilik mesra* as inappropriate because people felt too shy to use it. This demonstrated dissatisfaction to the *bilik mesra* facilities that were set up in the temporary shelters. The design of the *bilik mesra* that was initially meant to respect and give privacy for couples in meeting sexual and reproductive health needs was found to be inappropriate. Furthermore, participants complained that putting a big poster in front of the tent may create stigma among the affected population. The design of the *bilik mesra* without consultation with local stakeholders resulted in wasted resources because of privacy and confidentiality issues. In this context, the waste of resources was not only people not using the facility, but spending their money to buy privacy in other places.

Policymakers: Misunderstanding the purpose of facilities provided in the temporary shelter

For most policymaker participants, the setup of the temporary shelters was described as better when compared with the previous disaster responses. For example:

> *We provided good facilities in the temporary shelter in UKA. It had toilets and bathrooms…NGOs and authorities supplied clean water and had good waste*

> *management…It was much better than 2010 where they (affected people) were only living in just jambur…* (PM, M, KJ, #2)

> *While staying in temporary shelters, we gave them livelihood activities. We trained the affected people with sewing, embroidery, farming, hairdressing, and micro-finance through cooperatives…Not only to equip them with new skills but also to keep them occupied. Young people were given driving lessons, and all affected people were given psychosocial and mental health support. We also gave special training for disabled people…* (PM, M, KJ, #1)

These comments indicated there were efforts to provide holistic services to the affected people that went beyond the physical infrastructure. This demonstrated recognition of meeting the needs of the affected population that goes beyond just shelter. Participants noted that the 2013 responses were better than the previous responses, especially as various life skills and psychosocial and mental health support, were provided to people with disabilities. These social interventions provided a coping mechanism during the long-term stays in the temporary shelters, as well as equipping the affected population with (new) skills so that after the emergency period, they could carry on with their lives.

In contrast, other policymakers shared issues that they discovered in the temporary shelters. They described living in the temporary shelters as lacking because they found issues related to misunderstandings about the facilities that were provided. For example:

> *We provided Bilik mesra a corner for a couple to meet, be closed and curhat (speak heart-to-heart)…these affected people needed that support! This was based on the national concept to provide private rooms for couples…At least with 3 x 2-meter square…They could use the rooms for any consultations…But I don't think they (the affected people) understood…The purpose was not merely only for sexual intercourse…I asked people about that…some were using them and some were hesitant!* (PM, M, KJ, #1)

Another policymaker described that people misunderstood the purposes of facilities that were provided in the temporary shelters as lacking because of the lack of use of those facilities. That participant mentioned how people interpreted the function of *bilik mesra* in a narrow-minded manner that resulted in hesitancy about using it. This captured the feeling of questioning perspectives regarding the facilities that were provided by the authorities in the temporary shelters. The participant mentioned the government's efforts to provide privacy, including meeting the sexual needs of the affected population, during the emergency response and the use of *bilik mesra* as a place for family to meet and *curhat* (speak heart-to-heart). There was a

lack of understanding about and unfamiliarity with facilities provided in the temporary shelters that resulted in low use of those facilities.

6.5. MAKING EFFORTS TO IMPROVE DISASTER MANAGEMENT

Women, community leaders, health personnel and policymaker participants shared their views related to the way authorities managed the 2013 eruption. Some participants appreciated the activation of local disaster management authorities that helped facilitate the disaster response, whereas for others, the emergency response period was seen as being too long. This changed people's motivation and expectations due to growing dependency on aid and support. Finally, some participants raised issues related to accountability during the period between the affected people moved out of the temporary shelters and moving to the relocation site.

Women: Wishing to be relocated as soon as possible

For most of the women participants, the way the authorities managed the 2013 eruption was described as changed because during the response, the President of Indonesia visited the affected people, which resulted in the activation of local disaster management authorities that positively impacted the way authority managed the disaster. For example:

> *After the visit of President Jokowi, everything changed. The JOKOWI KIS helped us a lot. It helped me to deliver safely at Evarina Hospital. I did not pay anything…The KIS card had saved my life and family.* (Woman, II, Village 2)

For this woman, the President's visit signalled the power of leadership and how this could influence the way people respond to and manage disasters. This indicated that in large-scale disasters, interventions from the central level influenced the way local authorities managed the disaster. With the current decentralisation in Indonesia, there are still some aspects within the political architecture where the central government plays an important role, including building the capacity of local authorities in managing disasters and regaining people's trust in the authorities.

Some women participants described the experience of living in the temporary shelters as frustrating, with the initiative to relocate them to a new relocation place described as a welcome relief.

> *It was a long transit in the temporary shelter...I wish they could have done it as early as possible. Imagine living there for more than 1 year…almost 2 years…it was so frustrated. My family could not settle. Finally, we were told that we will be given another home. I was so happy to hear that we will be moving to Siosar…I thanked the authorities…* (Woman, II, Village 1)

This showed the feeling of frustration while spending a long time in a low resource setting. The participant wished that the relocation could be initiated earlier as the long period of living in temporary shelter hampered people from moving on. For many people, living in temporary shelters can mean that life is put on hold and they are not able to move on.

Community leaders: Gaining disaster management knowledge, no specific services provided

For most community leader participants, the experience during the 2013 eruption was described as an opportunity as they received training on disaster management and gained experience in managing a community during a disaster. For example:

> *Behind the disaster, we gained something. After the President visited us and inaugurated our local disaster management authority…After his visit, we were trained on how to manage communities during a disaster…Donations were tracked and reported regularly…I think, without the eruption, we did not know how to manage people during a disaster…Now we have basic knowledge on evacuation, dapur umum (public kitchen), and another important thing is knowing that pregnant women, children, older people, and those with disabilities should be priorities when there is a disaster…* (CL, M, FGD, Village 1)

That community leader described the 2013 eruption as an opportunity because the local disaster management authority trained them on basic knowledge about disaster management. The participant mentioned that the 2013 event had given them a chance to learn and gain knowledge on how to manage disasters at the community level. They acquired skills after receiving the training, with new abilities to prepare distribution reports, understand basic key interventions and realise what needs to be done when a disaster occurs. This indicated there was a perception of being thankful to the local authority for the training on disaster management. It also suggested there was a 'silver lining' aspect to the disaster, as despite the distress, they were given another avenue for learning important skills related to disaster management.

However, the opportunities for receiving training on disaster management were only given to select people. For example:

> *I did not receive any training. Until now, I am still asking why? At that time I was busy. I heard some people were sent to Kabanjahe for training. I did not know how they choose those people. At that time, we were very busy, even we forgot to have our lunch and dinner. I wish they had the training inside UKA [temporary shelter], or earlier, before the eruption in 2013…The eruption started in 2010, why did not they train us right after the first eruption in 2010? Or even before the disaster?* (CL, F, FGD, Village 2)

That community leader described the provision of disaster management training as questionable and not in the correct manner because of unclear criteria for selecting participants, and issues related to the venue and time the training was conducted. The participant described the feeling of apprehension and being unclear about disaster management training for community leaders. Conducting training during the busy period of disaster response was perceived as adding to the workload, and in this context affected the emergency response interventions. This statement highlighted the importance of conducting training on disaster management in disaster-prone areas before a disaster occurs as part of preparedness activities.

Health personnel: Better coordination, realising the negative impact of the prolonged emergency phase

For some health personnel participants, the performance of authorities when managing the 2013 disaster was described as improved from the past, as multiple stakeholders had coordinated the work. For example:

> *After the visit of the President, I felt that Badan Penanggulangan Bencana Daerah - BPBD (provincial level disaster management authority) coordinated the work with DINKES (health authority). Staff from DINKES visited temporary shelter more regularly. Staff from Medan (provincial level) came and interacted with affected people and with health staff on the ground…what a difference! I was very happy…* (HP, M, FGD, CHC1)

This demonstrated recognition of the power of communication during an emergency response. The participant described how the coordination across sectors resulted in regular monitoring and sharing of information among stakeholders. Undertaking field monitoring provided another opportunity for the authorities, including the health sector, to listen directly to affected people.

In contrast, for some health personnel, living in the temporary shelters for a long period of time changed people's motivation and expectations, because of growing dependency on aid and support. One participant stated:

> *The long stay in the temporary shelter with serba gratis (free-of-charge services and donations) have changed people's mentality and made people lazy…I am sorry…but they do not worry to go out and work because they know that in the morning, day time and night time, they have something to eat…besides, when we call people for health education, they always ask whether they will receive any money…frustrated.* (HP, F, FGD, CHC1)

This reflected the feeling of 'worrying' about the negative impact of the prolonged provision of aid and support during disaster. The extended period of disaster response had changed the mentality of affected people, through staying for long period in the temporary shelters with regular support and provision of free-of-charge services. Furthermore, according to some participants, this became an obstacle in providing MRH services to the affected population, as affected people began demanding something in return for any gathering activity. Finally, this statement signalled that disaster management in Indonesia has a long way to go. As a disaster has its own cycle, staying/getting stuck for a long period in the emergency phase may result in some negative consequences. One of the negative consequences described by participants was aid dependency.

Policymakers: Getting better, addressing the 'missing period' between temporary shelters and moving to new homes

For most policymaker participants, the experiences of managing the 2013 disaster were described as getting better because of the activation of district-level disaster management. One policymaker stated:

> *After the visit of our President, the district level disaster management authority was established. Thank God! We were able to provide better responses. We coordinated the work among stakeholders, including with DANDIM, health and other sectors…We ensured logistics were being recorded and distributed to the right people…provided reports regularly to SEKDA (the District Secretary).* (PM, M, KJ, #2)

This demonstrated the feeling of 'appreciation' for the activation of disaster management authorities at the district level, as it provided better authority to manage the disaster directly. The statement also showed how better coordination resulted in improved reporting of interventions during the disaster response.

In contrast, other policymakers described the period after the affected people were moved out of the temporary shelters and given money to rent houses while waiting to be relocated to Siosar

as the 'missing period'. They felt there were insufficient mechanisms to monitor the welfare of affected people. For example:

> *Since the 27th of October 2017, the temporary shelters were closed down and affected people were given money to rent houses and land for farming while waiting for the new relocation site in Siosar to be ready. This was the missing period, where I did not know how best we were able to ensure those people's welfare, including how best they made use of the money we gave them for living costs. We did not have any strategy to monitor those people. What I know, the money was given to the head of sub-district and to villages, and to the affected people. Was there any monitoring in the field? I did not know that…I could be wrong…* (PM, F, Mdn, #3)

This statement captured the feeling of worrying about the affected population during this transition period moving from temporary shelters to the new relocation places. It also hinted at some gaps in the area of disaster management, particularly in terms of a mechanism for disbursement of living allowances to affected people by the authorities. During this transition period, the affected population did not stay in one concentrated area; instead, they were living in rented houses that were scattered across Karo District. Participants expressed apprehension about the way the authorities managed the distribution and monitoring the use of living costs among affected people. Despite having good intentions to ensure affected people received welfare assistance while waiting to be moved to the new relocation places, there were issues related to accountability.

6.6. SUMMARY

This chapter examined the experiences of the 2013 eruption of women, community leaders, health personnel and policymakers at the district, provincial and central levels. Data were gathered through FGDs and individual interviews. The chapter started with initial reactions during the 2013 eruption, and continued with experiences related to the provision of MRH services during the emergency response. The chapter then elaborated on the experiences of living in temporary shelters and how they affected the MRH needs of pregnant women and other affected people. Finally, experiences related to the way authorities managed the 2013 disaster were presented.

First, women, community leaders, health personnel and policymakers shared their experiences of the period during the eruption. Women's experiences of the 2013 eruption showed that they experienced a difficult time when escaping, although some noted their experience of previous eruptions had increased their level of readiness. Some community leaders contended that the 2013 event was significant, whereas others interpreted the eruption in different ways. In addition, some health personnel described the event as a life and death experience, with others stating that the 2013 eruption was another opportunity to test their logic and ask for God's protection. Finally, policymakers highlighted the scale of the disaster that required them to take immediate action, with some interpreting the event as an arena for policymakers to gain people's trust after learning from the 2010 eruption response.

Second, experiences of assessing and providing MRH services were described differently by women, community leaders, health personnel and policymakers. Some women felt grateful for the availability of the services during the emergency period, whereas others shared unsatisfactory experiences. Community leaders described the provision of MRH during the 2013 event as getting better but 'still very basic'. For health personnel, the experiences of providing MRH services were described in terms of appreciation for the better functioning health delivery system when compared with the 2010 response. However, other health personnel described the delivery of healthcare as stressful because of demand to perform at different capacities with limited resources. Finally, policymakers described MRH services as 'getting better' when compared with the 2010 response, although some mentioned that the scale of the disaster required them to work extra hard due to the inherent chaos in the hectic situation.

Third, participants shared their experiences of living in temporary shelters and how this affected their MRH needs. Some women felt grateful for the immediate set up of temporary shelters that gave them a place to stay during the displacement period, whereas others shared concerns related to privacy, hygiene, sanitation and security. For community leaders, the temporary shelters were described as better when compared with the set up during the 2010 eruption, although others noted there were some issues and need for improvement. Health personnel acknowledged the support provided by non-governmental organisations to improve living situations in the temporary shelters. However, other health personnel indicated the infrastructure inside the temporary shelters was not designed according to the local context, which impacted how the MRH needs of the affected population were met. Finally, for

policymakers, the setup of temporary shelters was described as better when compared with the previous disaster response, although others shared issues related to people's misunderstandings about the facilities that were provided in the temporary shelters.

Finally, women, community leaders, health personnel and policymaker participants shared their views related to the way authorities managed the 2013 eruption. Some women felt grateful for the activation of local disaster management authorities, whereas others described the experiences of living in the temporary shelters as being a long transit and frustrating. They wished to be relocated as soon as possible. Most community leaders stated that the experiences during the 2013 eruption were an opportunity, as they received training on disaster management and gained experience in managing a community during a disaster. However, others questioned the criteria for selecting people to attend training. Health personnel described the performance of authorities while managing the 2013 disaster as adequate, as they felt that stakeholders coordinated the work. However, for other health personnel, the prolonged emergency response changed people's motivation and expectations because of growing dependency on aid and support. Finally, for policymakers, the experiences of managing the 2013 disaster were described as getting better because of the activation of district-level disaster management. However, others questioned the accountability during the period between the affected people moved out of the temporary shelters and moved to the relocation site. They described this as a missing period.

Overall, this chapter identified the experiences during the 2013 eruption. The findings revealed that although the 2013 event was not the first eruption, the scale of the disaster caused shock among the participants. Moreover, the previous eruptions had provided important lessons and built the level of readiness of some participants. The findings also revealed that the authorities had made efforts to improve the disaster management system, including the intention to integrate MRH into the emergency response by providing health services and shelter to accommodate basic needs of the affected population. However, the provision of MRH services and temporary shelters was seen as basic and leaving room for improvement.

The next chapter presents participants' views related to the current DRM practice through experiences and perspectives of living in the relocation site in Siosar.

Chapter Seven: FINDINGS II
Living in the moment: New lives in a new location – Current DRM practice

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For us Karo people, we believe that getting married, pregnancy and having children are part of our culture. Children are our future. They will continue the marga (family name/tribe). We have five main-marga here: Karokaro, Ginting, Tarigan, Sembiring and Peranginangin…when I die, I might be crying inside my tomb, I am worried about the future of the Karo people here (in the new relocation place in Siosar)…I hope the Government will seriously see our lives here…We are grateful to be here…but the relocation in Siosar is 'pekerjaan rumah yang belum selesai' (an unfinished homework).

(CL, II, Village 2)

7.1. INTRODUCTION

This chapter presents the perspectives of women, community leaders, health personnel and policymakers at the district, provincial and central levels regarding the current DRM practice. Data were obtained through FGDs and individual interviews. The chapter focuses on the experiences and perspectives of living in the relocation site in Siosar. The findings relate to the research objective: 'to examine perspectives of current concepts of DRM practice in Indonesia'.

After living in the temporary shelters for more than 1 year, the Government of Indonesia initiated the closing down of this accommodation and plans for relocating affected people. While waiting for the relocation site to be ready, the affected population were given money to rent houses because the UKA temporary shelters were closed. The affected people were given two relocation options. First, *relokasi mandiri* (independent relocation), where they received money to buy land and build their own house in any area they wanted to settle. The second option was relocation in an area provided by the government. Among seven affected

villages, four villages opted for *relokasi mandiri* and three villages opted to move to a new place prepared by the government.

The figure below summarises the processes, time and events experienced by the affected people who chose to move to the relocation site in Siosar prepared by the Government. The figure was extracted from various documents related to the 2013 eruptions and post-disaster response gathered during the literature review and fieldwork, as well as the data from FGDs and individual interviews with women, community leaders, health personnel and policymakers.

Figure 23: Chronology of the relocation in Siosar

For those who chose the second option, the Government used the S*istem Rumah Ganti Rumah – Lahan Ganti Lahan* (house replaced with house – land replaced with land system). This system provided house and land irrespective of previous home/land ownership.

Following approval from the Environment and Forest Ministry of Indonesia, the pine forest of Siosar was chosen to be the new location for the three government-relocated villages. The authorities and military personnel worked together to build new infrastructure and houses for the affected people. A new road was constructed that made Siosar accessible from the district capital (KabanJahe) in less than 2 hours by public transport.

The new relocation site had three *jambur*, three village offices, one primary and intermediate school, two churches and one mosque. It also had two health facilities with three village midwives for each village. One of the health post buildings was shared between the Bekeurah-Siosar and Simacem-Siosar villages. Finally, in August 2015, the affected people were gradually moved into their new homes in Siosar.

Like other normal villages in Indonesia, the new villages received *Dana Satu Miliard* (Village Fund), which is a Government initiative aimed to improve service delivery performance at the lowest administrative tier to reduce social inequality and poverty. Although these new villages in Siosar were geographically located far from Sinabung, they were still recognised and managed by the previous sub-districts (Kecamatan Payung and Naman Teran). Similarly, the provision of health and MRH services in Siosar was still managed by the old health system territories, which were under the Payung and Naman Teran *Puskesmas*.

The following table presents findings framework using a thematic analysis approach (Braun & Clarke, 2013).

Key Nodes				Categories	Themes
Women	**Community Leaders**	**Health Personnel**	**Policymakers**		
Grateful but finding it challenging	Grateful but finding it frustrating	Grateful but need to adapt to the new rhythm	Grateful but need local authority to continue management	**Starting a new journey**	**Living in the moment: New lives in a new relocation – Current DRM practice**
Much better but still surprised	Much better, but still very basic	'I just need a smile'— Appreciating the work of health service providers	Much better, but with some concerns	**Finding challenges while accessing MRH services**	
New houses, but challenging to occupy	New hope, but the houses are not adequate	Finding quality issues in the new houses	Ability to replace the new houses is the indicator of measuring 'independence'	**Challenges of living in Siosar**	
Still worried	Not easy, thinking about the consequences	Not easy, requesting extra attention	Documenting the process for future learning	**Realising unfinished business**	

Table 13: Findings related to new lives in a new relocation

This chapter commences with participants' perceptions of moving out of temporary shelters to the new locations in Siosar. The chapter follows with experiences related to accessing MRH services in the new location, including perceptions related to facilities available in the health posts. The chapter then outlines perceptions related to new houses and infrastructure, and how they affected access to and provision of MRH services. Finally, this chapter describes how women, community leaders, health personnel and policymakers perceived the way authorities managed the relocation as part of post-disaster efforts.

7.2. STARTING A NEW JOURNEY

Women, community leaders, health personnel and policymakers described their life in Siosar in different ways. Most participants said they were grateful to start a new life in Siosar because of the availability of houses and land to replace their old ones, along with infrastructure and facilities that were built by the authorities, including permanent health post buildings. However, some were concerned about the soil texture in Siosar because it was different from their previous land.

Women: Grateful but finding it challenging

Most women participants who opted to move to the new relocation area in Siosar described themselves as grateful compared with those who opted for *relokasi mandiri* (independent relocation), where affected people were given money to buy land and build a house in any place they wanted. One woman said, *'We heard so many stories from other villagers who opted for relokasi mandiri. Their villages no longer exist. They are now scattered. They missed their old neighbourhood…'* (Woman, II, Village 1)

This statement demonstrated how people appreciated the sense of togetherness being recreated by the new place. This case showed that in the Indonesian context, the option of a pre-arranged relocation site may be better to keep communities together, and preserve local culture, traditions and relationships. *Relokasi mandiri* appeared to have several drawbacks and be largely unsuitable for Indonesian culture, as the arrangement resulted in a negative impact for society. Independent relocation might have allowed free choice, but people that choose to live separately from their old village lost their sense of togetherness, which disrupted the culture of their original village.

Despite feeling grateful for being relocated to Siosar, some women participants expressed concerns related to the living conditions in the new location. They described the situation as difficult because of how challenging it was to their livelihoods.

> *Here, it is very difficult to earn money. We have only a half-acre of land. In the old village, we used to have 2 acres of land and we farmed coffee, oranges, spring onions and cabbages. We had a good business there…[looked at the windows], but here nothing seems to work…we can only plant for our family's consumption.* (Woman, II, Village 1).

That woman shared her feeling of frustration in starting a new life in Siosar. The size of land given to the affected population appeared to be insufficient to start a new business. For the Karo people who lived in the villages, their source of income relies on agricultural business. Therefore, having a relatively small area of land with different soil characteristics from their homeland affected people trying to start new lives in Siosar.

Community leaders: Grateful but finding it frustrating

Some of the community leaders who choose Siosar described the move as the right thing to do because the new relocation preserved the old village community as much as possible. One community leader stated:

> *We did the right thing. We chose for Siosar rather than opt for relokasi mandiri. Here in Siosar, we still together with our neighbours…our village still exists...those who opted for relokasi mandiri, their villages no longer exist...it remains history.* (CL, FGD, M, Village 1)

Similar to the majority of women participants, the community leaders showed feelings of appreciation for the villagers' decision to move to Siosar, a predetermined relocation site prepared by the authorities. This option appeared to suit the affected people as it was a good way to preserve the old villages. The government's effort to prepare Siosar as the relocation place for people affected by the 2013 Mount Sinabung eruption was very much appreciated.

In contrast, other community leaders shared different experiences of living in Siosar. Similar to some of the women participants, they described the new relocation place as frustrating as they faced issues related to the land and houses, but they had no other choice. For example:

> *I have been trying to plant rice here but with no success. The grains did not come up, so there was nothing harvest…I feel very frustrated. I have just tried planting coffee, but the soil does not seem fertile. I have to wait for another 2–4 years…* (CL, II, Village 2)

That community leader described the feeling of living in Siosar as very frustrating because of the difficulties of starting an agricultural business in a new area. The statement showed the challenge of finding the best plants to grow in Siosar, as the soil profile in Siosar differed from that in the old village. The affected population used to live in an area suited to planting tropical vegetation, whereas the higher altitude in Siosar meant the land condition was different. This pushed the community to think harder and consider other options for their agricultural businesses.

Health personnel: Grateful but need to adapt to the new rhythm

Most health personnel participants were thankful that the affected population was able to move to Siosar. The new place had health posts that enabled the provision of MRH services. For example:

> *Now they have their own clinics…permanent building not an open room without partition...with village midwives and medical equipment…they should be thankful. It is much better to compared to the ones in the temporary shelter.* (HP, F, II, CHC1)

The health service provider described that in the new location, the affected population could better access MRH services because the health posts had medical equipment and health service providers, and compared the situation of the health posts in Siosar with the previous temporary shelters. The current health posts were built recognising the importance of ensuring privacy and confidentiality. The initiative of relocating the affected people to a new place that was equipped with proper facilities and infrastructure, as in other normal villages, increased the effectiveness of those services. However, for a few health service providers, moving the affected population to Siosar was challenging because of the new rhythm of life. One mentioned:

> *In the old villages, people came to Puskesmas during the day time. This was the time where people used to have good business. They had four to 10 labours helping them in the farms. Then wives had time for family and could come to Puskesmas during day time, as we open from 9 to 3 in the afternoon…These days in Siosar, people are struggling to start their lives. They go to their farms during day time and come to clinic night time when the village midwives are about to sleep…* (HP, F, II, CHC2)

For this participant, moving to Siosar required some changes. Health personnel assigned to Siosar had to adjust to the new rhythm of the affected people, where they had to provide services mostly during the night time. This was because during the day, people in the relocation site went to work at their farms. In the old village, people went to the health post to access MRH during the normal operating hours. This corresponded to some of the statements made by women and community leaders that indicated starting a new life in Siosar was not easy, as people (including women) needed to sacrifice their day time to go to the farm, and only had time to see health providers during the night time.

Policymakers: Grateful but need local authority to continue management

For most policymaker participants, the reaction to moving the affected population to Siosar was one of gratitude, because the new location was equipped with facilities (including health posts to enable the provision of MRH services), as well as good infrastructure. One policymaker said:

> *Siosar is equipped with health clinics, including complete equipment and midwives. It also has water and electricity to make sure people have access to hygiene and sanitation, as well as better living. Electricity is there so that they could listen to the radio, watch television, charge their mobile phones, including contacting relatives and hospitals in case any family members are sick or would like to deliver a baby…* (PM, M, KJ, #2)

That participant indicated a feeling of accomplishment in meeting the needs of the affected population through the appropriate relocation site. Similar to women, community leaders and health personnel, policymaker participants stated that the infrastructure in Siosar (including health posts to ensure access to better MRH services) was helpful and good for the population. The new villages were also equipped with electricity to enable telecommunication technology for health personnel to run their services and communicate with higher-level health facilities as part of referral mechanisms. Setting up Siosar with electricity showed the government's seriousness in ensuring that the relocated villages were not isolated from the rest of the world.

In addition to achievements related to providing basic infrastructure in Siosar, some policymaker participants raised issues related to the continuation of operational and management responsibilities. For example:

> *Department of Pekerjaan Umum (Public Works) built the relocation site in Siosar. It has clinics, mosques, churches, and other public facilities…PEMDA (district level authorities) should continue to manage these infrastructures provided…It cannot continuously depend on the central government*. (PM, M, J, #4)

Policymakers described issues related to decentralisation, particularly with regard to local governments continuing efforts begun by the central government. They raised particular concern related to the ability of district-level government to maintain the facilities and infrastructure in Siosar. This was seen as more of a responsibility for the district level authority. The central and district level authorities need to form a strategy addressing how to handover the management of Siosar.

7.3. FINDING CHALLENGES WHEN ACCESSING MRH SERVICES

MRH provisions in Siosar were described in different ways by women, community leaders, health personnel and policymakers. Some participants were grateful for having health service providers in Siosar. Conversely, others raised issues related to changes in the provision of MRH services and the quality of MRH facilities. Furthermore, some raised issues related to the workload of health service providers assigned to Siosar.

Women: Much better but still surprised

Most of the women participants were thankful that the MRH services had new facilities in Siosar with healthcare providers. One said, '*I like the current village midwife. She is very good. She is always available and helps us'* (Woman, II, Village 1). That woman was pleased about having a health service provider assigned to the new place, and felt comforted by the professionalism of the service. In Indonesia, health personnel are well respected. In most parts of the country, medical doctors and midwives are seen as God's representatives in the community, because they heal diseases and help pregnant women during deliveries. Therefore, health personnel assigned to the community that have the right attitude are highly respected. In contrast, when they do not respond appropriately, people will judge and dislike them. This means health personnel are required to have certain competencies to build trust in the community, even in a post-disaster context. This emphasised the importance of equipping health personnel who are assigned to post-disaster settings with the ability to work under stressful conditions. Health personnel with higher levels of resilience would be able to gain the trust and respect of the community, as well as provide adequate MRH services.

Although there were major efforts to ensure the provision of MRH services in Siosar, for some women participants, accessing MRH services came with issues related to affordability. For example:

> *I think Puskesmas Singa is the nearest to here. It takes just 10 minutes to reach there. When my son got sick, I went to Puskesmas Singa. The health personnel asked why I had not gone to Puskesmas Naman Teran. I did not answer because I knew that they already knew my reason.* (Woman, II, Village 1)

> *When I saw a doctor to check whether I was pregnant, I was surprised when a staff member at Evarina Hospital gave me a bill. She said that I must pay Rp150,000 (Indonesian rupiah)…She told me that my KIS Jokowi (Kartu Indonesia Sehat: Healthy Indonesian Card, a subsidised health scheme, created by President Jokowi) was no longer valid. She asked if I had BPJS…I was not informed that the KIS Jokowi no longer worked.* (Woman, FGD, Village 2)

These two woman described the current provision of MRH services as surprising because of issues related to referral and payment. The current MRH system in Siosar was seen as confusing and impractical since the facilities in Siosar were still under the old territory, which was geographically far away. Although Siosar is located in a different sub-district (i.e. the Singa sub-district), the villages and their health administrations were still under the old sub-districts (i.e.: Payung and Naman Teran sub-districts). This created confusion and impracticality when it came to referrals.

Moreover, the provision of MRH services was no longer free-of-charge. Affected people were required to join the *Badan Penyelenggara Jaminan Sosial* (BPJS; social insurance; the new health insurance scheme in which people have to pay a monthly premium to receive healthcare free-of-charge at point of service). Participants mentioned that this came as a surprise, as they were not informed about this change. The old system used in the temporary shelters whereby people accessed free MRH services using the KIS (Healthy Indonesian Card; a subsidised health scheme created by the President Jokowi) was no longer valid. They viewed the push to join the new BPJS scheme as being introduced at the wrong time and quite challenging, as they were still struggling to start new lives in Siosar.

Community leaders: Much better, but still very basic

For a few community leaders, having a health post in the new place was described as better because the current building was permanent.

> *The [health] post is much better. The building is permanent and like the other Puskesmas building. I remember the [health] post in UKA (temporary shelter) that was located in the middle of UKA building and separated only by white cloths. Even to whispering, people outside could hear. I imagined opening my clothes inside the room for the doctor to check me...I was feeling shy…* (CL, F, II, Village 2)

Similar to health personnel participants, that community leader expressed appreciation for the new health post building in Siosar. The new building in Siosar is permanent and similar to other *Puskesmas,* which facilitated the provision of MRH services with privacy.

Despite having a proper set up for health post buildings, most community leader participants raised issues related to the availability of equipment and supplies, which were seen as basic and limited. According to community leaders, this compromised the provision of MRH services.

> *I think the equipment needs to be added. For example, the health post should have two beds instead of only one…so that two patients could stay there…the medicines are all generic (basics)…I ended up going to Kabanjahe to buy medicines from a chemist…[laughed]…oh yeah…one more, there is no water in the toilet…I guess the water pump could not reach the health post.* (CL, F, II, Village 1)

That community leader expressed the feeling of dissatisfaction due to the current health facilities being regarded as simple because of limited beds for patients, limited medicines and unavailability of water at the health post. The insufficient supplies and infrastructure available at the health post impacted the provision of MRH services because people had to travel outside of Siosar to access them. Finally, for community leaders, the availability of running water inside the health post was important to ensure better provision of MRH services.

Health personnel: 'I just need a smile'—Appreciating the work of health service providers

Similar to women and community leaders, some health personnel also noted they appreciated the facilities provided in Siosar. In particular, they praised the government for building staff houses for health personnel. One participant said:

> *Now things become better. In Siosar, they have two health clinics with three midwives. The buildings are permanent. They also have a house attached to those clinics for midwives to live with their families. So they do not need to rent houses…They also have a standby ambulance. Much better compared to the situation in temporary shelter.* (HP, M, II, CHC1)

That participant described the positive impacts of having staff houses in Siosar. The staff housing would help them perform better because they could have their family living in the same house with them. Staff houses ensured that health service providers were able to stay

with the communities without having to rent a house or live in a village further away, which facilitated the provision of 24/7 MRH services, including referrals.

However, living within the community and providing 24/7 MRH services posed issues for health personnel. The experience of providing MRH services was described as tiring, as they often worked long hours and faced many responsibilities to provide services to the affected population.

> *We are all human, I just need my clients/patients to smile at me…that's all. I also feel tired…sometimes no time to rest because busy helping deliveries…In the morning until the afternoon, I check pregnant women…then do office work creating reporting, cleaning, forecasting medicines...and after that in the night time should have extra work to help deliveries...at the end of the day...sometimes having less or no time for my daughters at home...I realised that...that is all my work and responsibility as a midwife...That is my duty...on the other hand, I am just a human, like others...I just need a smile...* (HP, F, II, CHC1)

Efforts to ensure the availability of 24/7 MRH services to the community without recognition of human resources limitation affected the welfare of health personnel. Moreover, the above comment demonstrated the feeling of needing appreciation, recognition and respect for the work they were doing. Furthermore, it showed that health personnel were also humans who had families, and as part of these communities, they were also affected by the disaster.

Despite the current workload, some health personnel also mentioned issues related to the lack of knowledge and confidence in providing MRH services in disaster and post-disaster settings. For example:

> *I was not expecting to be assigned in areas around Mount Sinabung, a volcanic area. When it erupted, I was shocked. I did not know how to help people when there is a disaster. Now, having Siosar as part of my area of responsibility, I am still not sure how to properly provide services to pregnant women and others. I wish that I learned this when I was in midwifery school or I was selected to attend the PPAM (MISP) training.* (HP, F, II, CHC2)

This indicated there was some feeling of insecurity and lack of self-confidence regarding the capacity and capability to provide MRH services during and after a disaster. That participant described that the assignment to work in the disaster and post-disaster setting came as a surprise. Lack of readiness, including knowledge on the provision of MRH services in disaster

settings, affected her confidence in helping pregnant women and other affected people. Health personnel realised the importance of building confidence by equipping them with the knowledge and skills related to disaster management through the inclusion of the MISP into the midwifery curriculum and training in relevant DRM subjects for those who were already in the workplace.

Policymakers: Much better, but with some concerns

For most policymaker participants, the current provision of MRH services in Siosar was described as being much better than before because of having health service providers and active outreach activities. For example:

> *The health clinics there have midwives who live with them…antenatal care, normal delivery and postnatal care can be done there. We provided a standby ambulance for referrals.* (PM, F, Mdn, #1)

> *Our team always actively reaches all communities providing family planning services. We have our mobile outreach team who visits villages and provides awareness and education related to family planning...we play movies to educate people…and we have ranges of contraceptives for couples…This is part of our daily activities.* (PM, F, KJ, #3)

These statements reflected feelings of assurance that the current arrangements in Siosar would ensure availability and universal access to MRH services. Participating policymakers described the current setup in Siosar as improved through recognition efforts from the government who had considered the availability of health personnel and ensured the provision of comprehensive MRH services, including ante- and postnatal care, family planning and referral mechanisms.

Despite efforts to ensure referral mechanisms and availability of health personnel on the ground, some policymaker participants raised issues related to the geographical location and capacity of health personnel that were assigned in Siosar. For example:

> *I heard the ambulance is not working well. It is located on the top of the hill. In that quite isolated area, there are only three midwives who live with the communities. What happens if there is an emergency? When the midwife needs to refer a delivery with complication in the middle of the night?…Also what happens to other people who are sick? I am very worried. They need a doctor there. I think it would better to upgrade the clinic there to be a Puskesmas or Puskesmas Pembantu so that they will have a doctor, and other health staff there.* (PM, F, M, #3)

The policymaker described issues related to geographical location and readiness to provide MRH services. The geographical location of the health post located on the top of Siosar hill affected accessibility for people, particularly those who were dying or could not walk to reach the clinic. Another concern raised by policymakers regarded the capacity of existing health personnel. Currently, Siosar is only equipped with midwives. According to Indonesia's current health system, the main responsibility of midwives is related to maternal, neonatal, adolescent and child health. Participants expressed some concerns related to meeting the health and MRH needs of other population groups, including males and older adults. Issues related to the scope and workload of midwives were also stated by health personnel participants, one of whom said, *'We are all human, I just need my clients/patients to smile at me…that's all. I also feel tired…sometimes no time to rest because busy helping deliveries…then do office work creating reporting, cleaning, forecasting medicines'* (HP, F, II, CHC1).

In addition to being overburdened with responsibilities, health personnel acknowledged the limitations of working in a post-disaster setting. As noted earlier, one said, '*…I am still not sure how to properly provide services to pregnant women and others. I wish that I learnt this when I was in midwifery school or I was selected to attend the PPAM (MISP) training'* (HP, F, II, CHC2). These comments indicated serious concerns related to capacity, readiness and insufficient numbers of health personnel assigned to Siosar. For policymakers, this reality posed serious consequences for the provision of MRH services. Therefore, to tackle this issue, it would be necessary to work on strengthening the health system. Policymakers also suggested upgrading the current status of the health facilities to either *Puskesmas* or *Puskesmas Pembantu* (auxiliary health centres), so that additional health staff, including medical doctors were present in Siosar to provide a wider variety of health services.

7.4. CHALLENGES OF LIVING IN SIOSAR

The infrastructure and facilities in Siosar affected the MRH needs of the people. Women, community leaders, health personnel and policymakers described the experience of living in one-bedroom houses in different ways. For participants, living in a small house affected their privacy and ability to meet their MRH needs. Moreover, participants also viewed the

government's *Dana 1 Milliar untuk Desa* (One Billion Rupiah Fund for Villages) from different perspectives. For some, the Fund would support the development of villages in Siosar, including supporting the provision of MRH services. However, others thought the Fund was insufficient for a relocation site.

Women: New houses, but challenging to occupy

Most women participants described their feelings about moving to Siosar as grateful, because the new houses protected them from bad weather. One said:

> *I have to thank God for giving me a proper house for my family...for my children and my husband. No need to worry when rain comes… In temporary shelter, we lived in the corner of the building. During rainy days, I used to move all my belonging and covered them with tarpaulins, otherwise they would get wet.* (Woman, FGD, Village 2)

That participant indicated that a challenge she faced while living in the temporary shelter was that she had to relocate her personal belongings during bad weather. The open space set up in the temporary shelter had resulted in her belongings getting wet, insecurity and unsafe conditions. For other women participants, the houses in Siosar were described as insufficient because of the small size and the fact that they only had one bedroom. For example:

> *Yes, I agree that we are no longer in the temporary shelter. But with only one bedroom, some of our belongings could not be placed inside the house. So I sometimes think, what is the difference between living in this house and in the UKA (temporary shelter)?* (Woman, FGD, Village 2)

> *I have only one daughter. It would be great to have another baby but I am scared. Sinabung is still erupting, one day the eruption might reach here. Not only that, our lives here are very difficult. We live in a small house. How can I feed my child if I deliver another baby? They will not be able to go to school.* (Woman, FGD, Village 2)

These women described the challenges of living in a small house as including a lack of privacy and protection. Furthermore, the challenge of living in a small house affected MRH needs, including freedom to choose and decide when to get pregnant, as there was little room for privacy and intimacy. This signalled how the new houses had issues with protection, privacy and well-being that affected people's MRH needs. Therefore, designing houses in a relocation area should consider both physical and non-physical aspects.

Community leaders: New hope, but the houses are not adequate

For some community leaders, moving to the new location in Siosar gave them new hope, because the government provided *Dana 1 Milliar untuk Desa* to help develop the villages in the relocation site. For example:

> *Dana 1 Milliar untuk Desa is very helpful for us. We got it in early 2017 and announced it to the people. With this money, we could continue to build our village. We use this to help build and maintain public facilities here in Siosar…We have allocated money to buy supplementary food, such as eggs, milk and rice, to be given to elderly people and children. We also created Kelas Manula dan Anak (class for older people and children) and organised activities, such as aerobics, walking and running for older people and children to keep a healthy lifestyle…Unfortunately, we have not budgeted anything for pregnant women.* (CL, M, FGD, Village 1)

That community leader acknowledged the government's Village Fund initiative had provided opportunity to build and maintain facilities in Siosar. The participant mentioned that despite current efforts to provide supplementary food for children and older people, the Fund was not used for any activities related to pregnant women. This initiative is part of Indonesia's decentralised political agenda that aims to improve service delivery performance at the lowest administrative tier and reduce social inequality and poverty. The Fund is allocated by each province and district and transferred to each village within its territory. Nevertheless, the Fund has not yet been optimally used to support the welfare of pregnant women, as reported by this participant.

Despite the government's Village Fund, some community leader participants raised issues related to the condition of the houses in the new place. For example:

> *The house is very small…only one bedroom. No privacy when it comes to sleeping at night time…In this house, my wife and I have to share with my mother-in-law and four of our children. We have no choice but to thank GOD...Our house and farms have been destroyed and are now under the volcanic ash along with our beloved village.* (CL, M, II, Village 2)

This community leader described living in the one-bedroom house provided in Siosar as having no privacy and no choice due to the size of the house. Similar to some women participants, community leaders also experienced issues related to privacy (e.g. frustration regarding living in such a small space with a family of four children). The one-bedroom houses

allowed for no privacy for couples to meet their sexual and reproductive health needs and created social issues within families in Siosar.

Health personnel: Finding quality issues in the new houses

Most health personnel participants described their reaction to moving the affected population to Siosar as thankful, because in the new relocation place, the government provided permanent houses for the affected population. One participant said, '*Now people no longer sleep in an open space...Now they sleep in the proper room inside the house*' (HP, M, II, CHC1). Having a relocation site with private houses allowed affected people to live in a better environment; compared with the previous living condition that was described as open spaces, the current permanent housing had a proper room. From the health personnel perspective, living in an open space setting resulted in health problems, including issues related to privacy, security and safety. Therefore, having proper houses in Siosar provided room for the affected population to rest.

In contrast, other health personnel shared issues related to the houses in Siosar. They argued that the houses were of poor quality.

> *I heard that the quality of houses there (in Siosar) is not good. Some of people who visiting Puskesmas mentioned that the woods used in their house's front doors are not good quality…Some also have problems with drainage. I think, because they were rushing in building Siosar, then they used cheap materials. Imagine in less than 1 month, they sulap (magically) changed the pine forest in Siosar into villages because the President himself came and open the relocation site.* (HP, F, II, CHC2)

This demonstrated a feeling of dissatisfaction with the quality of houses due to the rapid preparation for the ceremonial opening of the relocation site that compromised the quality of the infrastructure. It also revealed that the work was done in less than 1 month so as to be completed by the time of the President's visit. This was seen as having compromised the technicality, functionality and quality that later affected the social and health aspects of the people living there.

Policymakers: Ability to replace the new houses is the indicator of measuring 'independence'

For policymaker participants, the reaction to the government's Village Fund for Siosar was described as grateful, because they assumed the fund would also be used for pregnant

women and other vulnerable groups. One said, '*To date, the three villages in Siosar received Dana Satu Milliar. I assumed that they have included pregnant women, children and the elderly in that budget*' (PM, M, KJ, #1). The policymaker stated that there was room for better use of the Village Fund. Similar to women and community leaders, for this policymaker, availability of the Fund in Siosar meant opportunity for the betterment of vulnerable groups, including pregnant women, children and older adults. They realised that the Fund had to be used according to the existing needs of each village.

However, some policymakers felt that the new village in Siosar needed more than *Dana 1 Milliar untuk Desa*. They described Siosar as a 'baby' because the community members were still just about to start their new lives. One policymaker stated:

> *I think for new relocation like Siosar, the government should continue its support. These new relocation places are like baby who just learn how to crawling. They still need at least 10 years to be accompanied by the government. The central government should teach pemerintah Karo (district level government) on how to manage Siosar until people there are mandiri (independent)…Until people there able to rebuild the current houses into two-storey buildings. Only after the current buildings are being replaced with new ones, that is the indication that they are already independent…* (PM, M, KJ, #1)

That policymaker participant had a different view form many others. He felt that Siosar needed more than just a regular Village Fund, as the affected people had just recently moved and were looking to start their new lives. He used the current housing in Siosar as an indicator to measure whether the affected people in Siosar were already independent. The participant described the current situation of Siosar as a '*baby who is just about to learn to crawl*' because the people were just starting their new lives and it takes time for people to become independent. Furthermore, the participant used the current houses as an indicator of resilience and the ability to bounce back, saying '*Only after the current buildings are being replaced with new ones, that is the indication that they are already independent*'.

7.5. REALISING UNFINISHED BUSINESS

Women, community leaders, health personnel and policymakers described the way authorities managed the relocation as part of post-disaster efforts in different ways. Some

participants described Siosar as not the ideal place for the relocation site because it directly faced Mount Sinabung. In addition to creating difficulties forgetting the old villages, participants were also worried that another eruption of Mount Sinabung would reach Siosar. Furthermore, participants also mentioned that the existing challenges related to infrastructure and facilities in Siosar affected people's lives. Therefore, they would like the authorities to continue to manage Siosar and help people become more resilient. They described Siosar as an 'unfinished homework assignment' for the authorities.

Women: Still worried

For most of the women participants, living in the new location remained a concern because Mount Sinabung was still erupting. Furthermore, the geographical location and soil structure in Siosar was different compare with the previous land. One woman said:

> *Although Siosar is already far from Mount Sinabung, I still feel scared. From this place, I can still see the eruptions, almost every day…it is just in front of my eyes. I still feel that Sinabung is very close. Every morning when I wake up and look at Sinabung, I always remember my house and farm.* (Woman, II, Village 1)

This woman described the feeling of being unable to forget the lives and memories of her old village, as well as apprehension that Mount Sinabung was still an active volcano, especially as Siosar directly faced Mount Sinabung.

Furthermore, for some women participants, living in Siosar affected their willingness to get pregnant again. One woman said:

> *Sinabung is still erupting…I do not want to get pregnant anymore. I am traumatised. Imagine if I get pregnant and Sinabung batuk keras (big eruption) and reaches this place, and we have to run again…I am afraid of death.* (Woman, II, Village 1)

This woman described the feeling of being scared of getting pregnant because of the trauma of her previous experience. Although it is relatively far from Mount Sinabung, the higher altitude of Siosar makes it easy to see Mount Sinabung. When it erupted, people's memories, including those of women who were pregnant during the 2013 eruption, were kept alive and became difficult to erase. Many women had developed a feeling that one day Mount Sinabung's eruption will reach Siosar. This highlighted the importance of continuing mental

health and psychosocial support services in the new villages as part of comprehensive MRH services for women of reproductive age and other members of the population.

There were strong relationships between careful planning for the relocation site and MRH needs. Choosing new site required considerations related to geographical and physical conditions as well as social and psychological aspects that may influence the affected population who will reside there. Although the relocation site was far from the source of danger, it was located at a high altitude from which Mount Sinabung was easily visible. Therefore, it was difficult for affected people to move on, start new lives and forget their old villages.

Community leaders: Not easy, thinking about the consequences

For most community leaders, living in Siosar was described as difficult because it was not an ideal situation and the new place worried them in terms of future generations. For example:

> *For us Karo people, we believe that getting married, getting pregnant and having children are part of our culture. Children are our future. They will continue the marga (family name/tribe). We have five main marga here: Karokaro, Ginting, Tarigan, Sembiring and Peranginangin…when I die, I may be crying inside my tomb, I am worried about the future of the Karo people…I hope the government will seriously see our lives here…We are grateful to be here…but the relocation in Siosar is pekerjaan rumah yang belum selesai (an unfinished homework).* (CL, M, II, Village 2)

This community leader expressed the need to ask for more attention from the government to continue monitoring the situation in Siosar. The participant was worried about the future cultural practices of the Karo people because the living conditions in one-bedroom houses resulted in hesitancy to have more children and apprehension among young people about getting married. This suggested that the 'not ideal' situation could be fixed by paying more attention and finishing the work. The participant mentioned possible consequences should the government not take action about the unfinished business, including concern regarding the continuation of the Karonese marga (family/tribe).

Health personnel: Not easy, requesting extra attention

For all health personnel participants, being assigned to disaster-prone areas in the relocation site was described as difficult because they were required to work long hours, compared with those who were assigned to non-disaster-risk areas. For example:

> *For us who are assigned in Puskesmas, our work is much more than those who are posted in other Puskesmas…but we get the same salary…we do not have any additional incentives here…When Mount Sinabung [was] erupting, we were called to be part of the emergency response team, but no additional salary.. please hear us…* (HP, F, FGD, CHC1)

> *While other affected people still receive scholarships for children's education, our children have never received those kinds of benefits…they say because we are health staff who earn money every month with a salary…actually, we are also the same people who are affected by the eruption...Mount Sinabung continues erupting, and the volcanic ash does not select where to go...so we are also affected, but our children were. not eligible for those scholarships* (HP, F, FGD, CHC 1)

These two comments compared the responsibilities of health personnel who were assigned to disaster-prone areas with those who worked in non-disaster prone areas. They stated that their duties in disaster-prone areas were not easy because they had to be ready in case of an emergency. At the same time, their own families were also living in the disaster-prone area and were also vulnerable. These comments highlighted issues related to equity among health personnel, whereby those who were working in disaster and post-disaster settings were expected to work long hours and have extra responsibilities without additional compensation. In addition, as those who were assigned to disaster-prone areas also had their own families, most of the time they had to sacrifice their family's needs to provide health services. These participants requested that authorities listen to their voices and asked that the government pay extra attention to those who are assigned to disaster-prone areas.

Policymakers: Documenting the process for future learning

For all policymaker participants, the experiences of preparing and building the new villages in Siosar were described as a lesson for the government because of the additional attention, resources and time that were dedicated to creating it. One explained:

> *The everlasting eruptions in Sinabung, including the relocation area in Siosar, had absorbed a lot of energy. The Government has been allocating a lot of money to help affected people. They should document the process in response to the relocation in Siosar so that other provinces could learn, as Indonesia is a big country and experiences many disasters…* (PM, F, J, #7)

Policymaker participants highlighted the importance of learning from the lessons of Siosar. They also noted the realisation of the importance of documenting and learning from the efforts to improve disaster management in the future. Participants stressed the importance

of sharing the lessons from the creation of the relocation site in Siosar and using them for future disasters in Indonesia.

7.6. SUMMARY

This chapter examined the perspectives of women, community leaders, health personnel and policymakers at the district, provincial and central levels. Data were obtained from FGDs and individual interviews and covered current DRM practices in respect to women's life in their new locations in Siosar. The chapter elaborated on participants' perceptions of the infrastructure and facilities in Siosar and how these influenced the MRH needs of the people. Finally, perceptions of how authorities managed the relocation as part of post-disaster efforts were presented.

First, women, community leaders, health personnel and policymakers shared their feelings of being moving from temporary shelter to a relocation site in Siosar. Women and community leader participants thought that opting for Siosar kept their villages intact, compared with those who opted for *relokasi mandiri* (independent relocation), where their villages remained a memory. For other women and community leaders, moving from temporary shelter to a new location in Siosar was described as challenging because of difficulties in starting new businesses, as they only received a half-acre of land and the soil in Siosar differed from their previous land. For some health personnel, moving to Siosar was described an improvement, as they received permanent health posts to allow them to offer better MRH services. However, for other health personnel, the situation in Siosar was challenging as most people accessed MRH services at night because during the day time they went to their farms. Finally, some policymakers indicated that the relocation site in Siosar had better facilities including public services and clinics, whereas others had concerns regarding the capacity of local authorities to maintain and manage Siosar.

Second, the experiences of assessing and providing MRH services were described differently by women, community leaders, health personnel and policymakers. Some women felt grateful for the availability of the services in the new locations, whereas others described changes in referrals and fee structures. Community leaders described the provision of MRH

services as better because the current health centre was permanent. Others described the provision of MRH services in Siosar as basic because of limited facilities and supplies. For health personnel, the experiences of providing MRH services were described as much better as Siosar had health facilities. In contrast, others found the experience of providing MRH services was tiring as they were performing extra work with more responsibilities to provide services to the affected population. Finally, for policymakers, the provision of MRH services was perceived as better because there were health personnel and active outreach activities, although some raised issues related to geographical location and capacity of health personnel assigned in Siosar.

Third, participants shared their perceptions related to new houses and infrastructure in the new relocation place, and how they affected access to and provision of MRH services compared with living in temporary shelters. Many women and community leaders were grateful for the houses compared with living in the temporary shelters, and appreciated the Government's Village Fund to support the development of villages. Other participants described the condition of the houses as challenging because of their small size that posed created privacy issues and even resulted in hesitancy to get pregnant. For health personnel, new houses and infrastructure in the relocation site were appreciated, because the government had provided permanent houses for the affected population. Some participants raised issues related to the quality of those houses. Finally, for policymakers, the government's Village Fund was seen as essential to improve the service delivery and develop the new location of Siosar. However, others saw this Fund as insufficient and wished for additional funds.

Finally, women, community leaders, health personnel and policymakers described the way authorities managed the relocation as part of post-disaster efforts. For women, living in the relocation site caused some concern because Mount Sinabung was still erupting and the geographical location in Siosar was different, meaning they were still finding the best way to live. Therefore, their future life in Sinabung was uncertain. For most of the community leaders, living in Siosar was described as 'not easy' because the 'not ideal' situation of the new location caused concerns about the future generations. Therefore, they thought that the government still had unfinished 'homework' to do. For health personnel, being assigned in disaster-prone-areas including in relocation places such as Siosar, was described as not easy

because they were required to do extra work compared with those who were assigned in non-disaster risk areas. Finally, for policymakers, the relocation to Siosar offered a lesson because of additional attention, resources and time that were allocated to create the new site as part of the post-disaster response.

Overall, this chapter clarified the experiences and perspectives of living in the relocation site in Siosar. The findings revealed that moving to Siosar was a big relief for the affected population, as it gave them a chance to start new lives. However, nature and geographical conditions, along with the infrastructure and facilities provided required people to make huge adjustments. These challenges also impacted the way people lived and traditional cultures, as well as the way people met their MRH. Participants identified the existing challenges in Siosar as unfinished business for the authorities.

The next chapter presents participants' views related to future DRM models, including perceptions of planning pre-disaster, during a disaster and after a disaster occurs.

Chapter Eight: Findings III
Looking Forward: Perceptions for a future DRM model

Be prepared…do not add another disaster on the top of a disaster.
(Woman, FGD, Village 2)

8.1. INTRODUCTION

This chapter presents the perspectives of women, community leaders, health personnel and policymakers at the district, provincial and central levels concerning how to better integrate MRH services into DRM. These data were obtained through FGDs and individual interviews. The findings address the research objective: 'To explore views for a future DRM model'.

Having experienced the 2013 eruptions, living in temporary shelters and then relocation to a new place in Siosar, participants were asked to share their perceptions on how DRM should be in future. Women, community leaders, health personnel and policymakers shared perspectives related to the future DRM model in Indonesia, as summarised in the following figure.

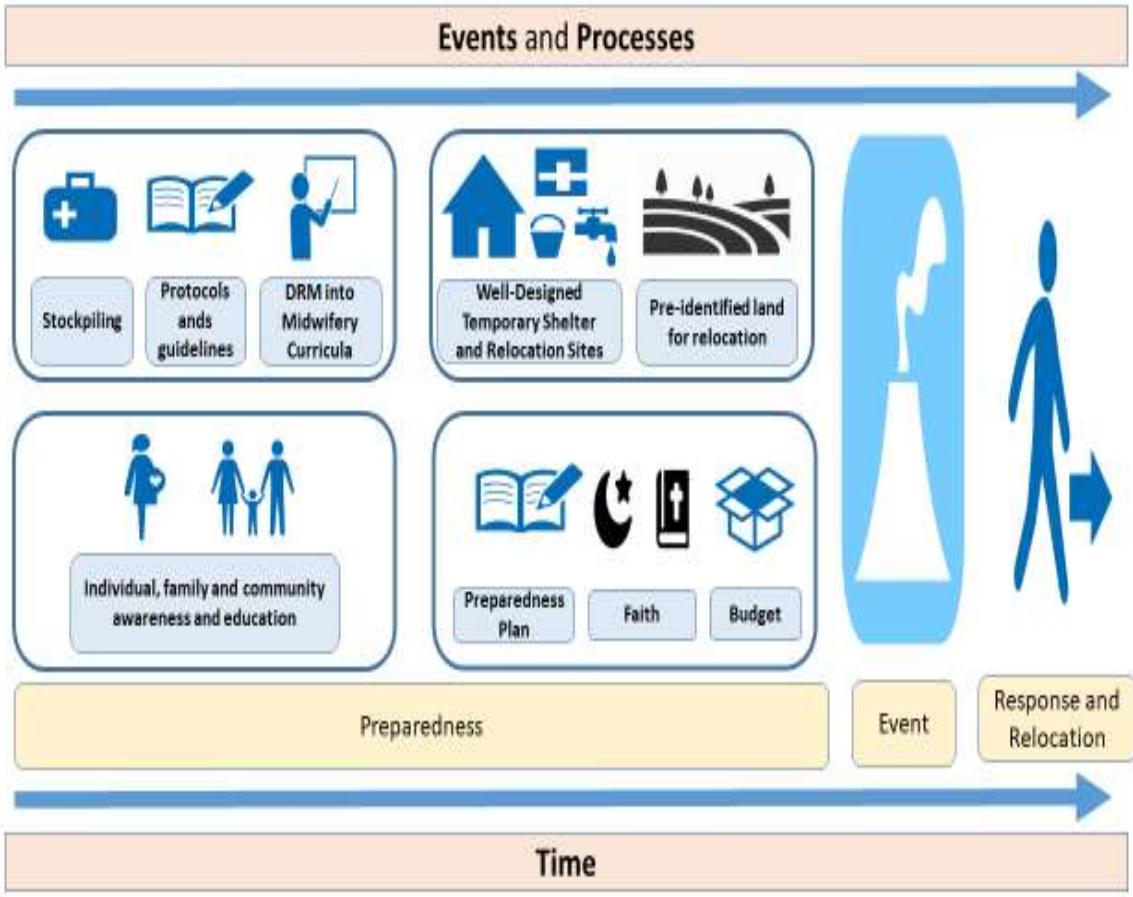

Figure 24: Perceptions of future DRM that better integrating MRH in Indonesia

Participants were aware that the Government of Indonesia was currently making efforts to improve its DRM model. They shared perspectives related to preparedness that would help the government respond better in a disaster. They mentioned factors such as educating pregnant women, family and communities, along with identifying existing initiatives and programmes that could be used as vehicles to improve the level of preparedness. Health personnel participants mentioned the ongoing MRH programmes initiated by the Ministry of Health, including the *Suami Siap Antar Jaga* (SIAGA) programme. Furthermore, participants were aware that there was an ongoing initiative to enhance the development of villages through *Dana Satu Milliar Desa* (One Billion Rupiah Fund for Villages) that could be used to improve DRM, including better provision of MRH services.

The following table presents findings framework using a thematic analysis approach (Braun & Clarke, 2013).

Key Nodes				Categories	Themes
Women	**Community Leaders**	**Health Personnel**	**Policymakers**		
Educating pregnant women on disaster preparedness situations	Role of family members and stakeholders in disaster management education	Educating people on how to prioritise and respect pregnant women during disasters	Providing more consideration for pregnant women during a disaster	**Educating and raising awareness among pregnant women**	**Looking Forward: Perceptions for a future DRM model**
Equipping health providers before a disaster results in increased competency and respect	Stockpiling MRH commodities	Simplifying and adopting protocols to suit a disaster context	Making midwives ready; Integrating MISP into midwifery curricula	**Preparing and improving MRH services**	
Ensuring protection and meeting people's basic needs	Considering privacy for couples—frequent monitoring visits at relocation places to check the living situations	Treating affected populations and health service providers with dignity and respect	Ensuring everyone is comfortable in the clinic—Keeping family at the centre	**Preparing for an enabling environment during displacement**	
Having an evacuation plan at the village level, stressing that communication is essential among policymakers	Using religious faith as a means to cope with stress during disasters	Creating a hazard-specific emergency health plan with local people; aligning the plan with relevant stakeholders	Linking development and preparedness, the need to increase the capacity of local authorities because of geographical challenges	**Making stakeholders ready**	

Table 14: Findings related to future DRM model

This chapter starts with views of how the DRM model should be implemented at the community level, including what measures need to be put in place. The chapter follows with perspectives on the key interventions that are needed to prepare for the better provision of MRH services in a future disaster. The chapter then outlines participants' views related to key

measures that should be considered to ensure a better surrounding environment during displacement to enable affected people start their new lives and meet their MRH needs. This included perceptions regarding better temporary shelters and relocation place for affected populations. The final section of this chapter describes how women, community leaders, health personnel and policymakers perceived the way authorities managed the DRM before a disaster occurred.

8.2. EDUCATING AND RAISING AWARENESS AMONG PREGNANT WOMEN ON THE RISKS OF DISASTERS

All participants argued that the future DRM model should include education and awareness for pregnant women, their husbands and entire communities on disaster management. Participants identified education for the community as a solution for 'what' to do when a disaster strikes. This would help to build resilience and reduce the vulnerability of the community, including preventing unwanted consequences for pregnant women. Furthermore, they also identified that the health sector could play an important role in educating communities on disaster management issues.

Women: Educating pregnant women on disaster preparedness situations

Most women participants believed the future DRM model should integrate education for pregnant women on what to do when a disaster occurs. They agreed that education on disaster management for pregnant women should be part of MRH services, including antenatal care. Furthermore, they thought health service providers, including midwives, could play an important role in educating pregnant women. One woman stated:

> *In areas where disasters happen frequently, during antenatal care, pregnant women should be told and guided on what to do if there is a disaster. This will make pregnant women less panicky during a disaster. They (pregnant women) will be empowered, skilled and not adding too much burden to others.* (Woman, II, Village 1)

Improved information on disaster management was identified as an important solution, particularly empowering pregnant women before a disaster. Participating women indicated that educating women on disaster management may result in the ability to manage themselves, cause less panic during a disaster and not add burden to others. Participants

mentioned that providing key messages on disaster management to pregnant women would result in better responses, more empowerment and reduce stress during a disaster. They suggested integrating disaster management into MRH services, including education and awareness messages during antenatal care visits. Indonesia follows the global requirement for quality MRH services by requiring access to healthcare providers for at least four antenatal care visits during pregnancy.

Furthermore, in addition to educating pregnant women, participating women stressed the importance of educating family members on disaster management issues. To achieve this, they felt the health sector could play a role in educating families for better preparedness. For example:

> *Before a disaster occurs, the family should know that during a hard time, pregnant women should receive extra support. I think, if our beloved ones aware of this issue, then when there is a disaster, pregnant women will feel okay…General community should also be made aware about protecting pregnant women during a disaster…They could get these messages on notice boards in Puskesmas.* (Woman, II, Village 1)

The women noted the importance of building awareness among family members and the wider community before a disaster strikes so that they were aware pregnant women become more vulnerable when a disaster arises. They perceived the health sector as an important avenue to sensitise communities on disaster management issues.

Community leaders: Role of family members and stakeholders in disaster management education

Most community leader participants highlighted that family members would be the first people to show concern, compassion and support during an emergency before making contact with health professionals. Similar to women participants, community leaders admitted that it was crucial for each member of the family to understand the one another's needs so they could help each other. This would also make an efficient emergency system, and mean everyone is ready and prepared during disaster emergency responses. One community leader described the role of family.

> *Husbands play an important role. They should provide support to their wives. In addition to mothers and fathers-in-law, relatives and the communities,*

> *particularly those who live in disaster-prone areas...Support starts from here, inside the house.* (CL, II, Village 2)

Another community leader stated the importance of building strong networks, particularly having family support from a cultural perspective.

> *Mothers-in-law and wives should get together one to each other…If they are talking one to each other, even when there is a disaster, the wives...who could be pregnant at that time…would be protected and saved. If they are not talking one to each other, even Mount Sinabung is not coughing (erupting), inside the house is already disaster…[laughed]…In our culture…we have Rakut Sitelu…where the mother-in-law and daughter-in-law should be together…most of the time, the husband will bring their wife to stay with husband's parents…Mother-in-law plays an important role.* (CL, M, II, Village 2)

This community leader highlighted the importance of mothers-in-law in providing support for pregnant women. He argued that as part of Indonesian culture, *Rakut Sitelu* (kinship system) means the mother-in-law and daughter-in-law should be together and respect each other. The relationship inside the family played a crucial part in protecting pregnant women. Further, he said, '*If they are not talking one to each other, even Mount Sinabung is not coughing (erupting), inside the house is already disaster'.* This statement showed the role of the mother-in-law in the family and how they should be included and made aware of the importance of meeting MRH needs during a disaster.

In addition, most of the community leaders also stated that having regular monitoring from authorities by visiting people living in villages would help educate them on disaster management. They recommended that any future DRM model should include a rigorous monitoring and evaluation system that allowed the community to learn directly from different stakeholders. One community leader stated:

> *Community leaders, health staff from Puskesmas (community health post), staff from Kecamatan (sub-district personnel) should come down here and educate villagers about disasters, including what to do when there is an eruption. Pregnant women should be taught on what to do when there is an eruption...they need that knowledge...so that no pregnant women died or have a miscarriage.* (CL, M, I, Village 1)

This community leader identified that another way to sensitise people on disaster management was through regular government monitoring visits so that people could be

educated on disaster management issues from different perspectives. Community leaders thought that people would be able to understand the importance of protecting pregnant women during disasters if stakeholders from the health and other sectors visited together to educate people.

Health personnel: Educating people on how to prioritise and respect pregnant women during disasters

Similar to women and community leader participants, most health personnel participants wished to see people receive education before a disaster occurred, in particular in relation to how to respect and prioritise pregnant women. For example:

> *I hope that communities should be educated that the rule of respecting pregnant women is not only during a normal situation. Even during the emergency period, people should still respect pregnant women. Educating this issue to people should be done before an eruption happen. If we educate people on this issue, they will know that pregnant women could easily get miscarriage when running during an eruption…or in the temporary shelter, pregnant women still need enough food and rest so that her body and the baby are in healthy condition…When we were in [the] UKA temporary shelter, I saw people were fighting with pregnant women to get a corner for sleeping or while lining up to get meals in front of [the] public kitchen.* (HP, F, II, CHC1)

Health personnel expressed hope that pregnant women would get similar respect from their communities in both normal and disaster situations. This, according to one participant, would help to protect and reduce the vulnerability of pregnant women in times of crises.

For most health personnel participants, the future DRM model should have MRH services integrated. One participant said, '*We have to inform pregnant women about "danger signs" of pregnancy…also about the "danger signs" of Mount Sinabung…so that they know what to do when Mount Sinabung is coughing…We do not want any maternal death case in our place*' (HP, M, CHC, Village 2). This participant realised the important role that could be played by health service providers in educating pregnant women on both MRH and DRM issues through preparedness measures. Similar to women participants, health personnel agreed that encouraging pregnant women to understand the 'danger signs' of both pregnancy and natural hazards could prevent unnecessary maternal deaths during a disaster. This point was similar to that made by other women and community leaders who argued for the importance of

expanding and integrating disaster risk management into MRH services as another way to prevent maternal mortality and morbidity and ensure disaster management.

Finally, some health personnel suggested the importance of adopting the existing SIAGA programme into the disaster context. Similar to women and community leader participants, they identified the importance of educating husbands on what to do with pregnant wives during a disaster. One participant said, '*Suami Siap Antar Jaga programme should be made available during a disaster as well. I think, if this programme to also apply during an eruption, that would be great*' (HP, F, II, CHC2). That participant wanted to see the SIAGA programme adapted for the disaster context. This programme aims to increase husbands' readiness to bring their pregnant wife to a health facility and stay there during and after the delivery. The participant hoped that the existing programme would not only be available during normal settings but also during a disaster so that husbands could help and be responsible for the safety and security of their wives, especially when they were pregnant. Therefore, the SIAGA programme would help to save the lives of pregnant women during a disaster.

Policymakers: Providing more consideration for pregnant women during a disaster

Most policymakers thought the future DRM model should have strong preparedness measures, including training and dissemination of disaster guidelines to the community. For example:

> *Communities, including pregnant women, should be trained on what to do during a disaster. Training including what to do while evacuating people, basic first aid, and other relevant emergency response. Health personnel should be around during training with communities.* (PM, M, KJ, 1)

> *Pregnant women should be taught what to do when there is a disaster…We have developed guidelines on family readiness during disasters…we want women, children, and all family members better prepare and safe during a disaster…artinya pada saat ibu itu hamil juga sudah harus diperhitungkan keselamatannya (that women who are pregnant with the foetus inside their tummies should be counted for their safety)…Unfortunately, not all stakeholders think this is a priority…* (PM, F, J, 7)

Policymaker participants described the importance of training and information dissemination before a disaster occurred because this would help the community to realise the importance of prioritising children and women as vulnerable groups when responding to a disaster. Similar to points raised by other participants, this demonstrated the importance of preparing

for a disaster through investing in training and dissemination of disaster management policies at the community level. Policymakers indicated the role of health service providers was to educate people on disaster management as part of their work in providing MRH services. In addition, policymakers also identified concerns related to lack of acknowledgement of the importance of disaster management among policymakers. Although the government of Indonesia had produced guidelines on family readiness during a disaster, they need to be disseminated to other key stakeholders as not all policymakers see this as a priority.

Finally, policymaker participants identified taking preventive measures by educating husbands, families and relatives about the vulnerabilities of pregnant women during a disaster.

> *Pregnant women are vulnerable…when a disaster happens, they even become more vulnerable. We have to let their husbands, families and relatives know about this. So that husbands should support and know what to do with their pregnant wives when there is a disaster…This has to be done before a disaster occurs as part of preparedness actions…The government should work on this to mitigate pregnant women died unnecessarily when there is a disaster or when in a relocation place.* (PM, F, J, 7)

Policymakers highlighted the importance of better preparedness, suggesting that educating husbands, families and relatives about pregnant women's vulnerabilities during a calamity was needed so that when an event occurred, unwanted consequences could be avoided. Furthermore, they emphasised the need for the government to come up with preparedness interventions that focused on mitigating risk for vulnerable groups, including pregnant women, during a disaster.

8.3. PREPARING AND IMPROVING MRH SERVICES

All participants stated that the future DRM model should integrate MRH components. To better integrate MRH, they identified issues related to equipping health service providers with knowledge and skills necessary for working during disasters, stockpiling commodities, simplifying MRH protocols to suit the disaster context and integrating MISP into the midwifery curriculum.

Women: Equipping health providers before a disaster results in increased competency and respect

Participating women felt that health service providers should be equipped with skills and knowledge on how to provide services in a disaster setting so they could provide MRH services during a disaster. One participant stated:

> *Midwives should be trained not only how to help the delivery of a baby but also to deal with pregnant women who are affected by a disaster. Persiapan yang matang itu kuncinya (better preparedness is the key).* (Woman, II, Village 1)

This participant expected healthcare providers, particularly midwives, to be equipped not only with skills and knowledge related to midwifery matters, but also to be trained in timely and relevant disaster response. This would mean that when a disaster occurred, healthcare personnel would be ready and able to provide MRH services. Women participants believed that the more skilled health providers were in responding during a disaster, the more respect they received from their communities.

Similarly, another woman participant mentioned:

> *They (health personnel) should know what to do the job even during an eruption. When they know what to do, people even put more respect to them so not to run out from the village when a disaster occurs and return when everything back to normal.* (Woman, II, Village 2)

This comment highlighted the relationship between competence and respect. Having competent healthcare personnel who were able to deal with MRH needs of pregnant women during a disaster was perceived as leading to more respect from the community.

Participating women recognised that better delivery of MRH during a disaster in the future could be achieved by investing in preparedness before a disaster occurred. They noted the importance of developing competencies to deploy during a disaster as an integral part of disaster preparedness interventions. This level of readiness would help to boost the confidence of healthcare personnel that provide MRH services during a disaster, and increase the level of respect from the community for health service providers.

Community leaders: Stockpiling MRH commodities

For most community leader participants, better delivery of MRH services during a disaster response could be ensured through better preparedness measures. They highlighted the importance of stockpiling commodities before a disaster.

> *DINKES KabanJahe (district health authority) to keep some of the medicines, contraceptives and other important items and make them ready to be distributed and used when a disaster strikes. So that they will not tell us 'we run out of medicines' during a disaster. Do not want a pregnant woman die just because they (health personnel) do not have basic medicines…I will be very upset.* (CL, II, Village 2)

For most community leader participants, the future DRM model should mean the accessibility and availability of MRH supplies to ensure the continuation of MRH services even during a disaster. The above statement revealed the need to stockpile MRH commodities at the grassroots level, which would then be ready to be mobilised and used in an emergency response. Furthermore, they mentioned the consequences for pregnant women that result from delay or unavailability of MRH supplies during disasters. Participants argued that having MRH commodities available during a disaster would help prevent maternal deaths.

Health personnel: Simplifying and adopting protocols to suit a disaster context

Most health personnel participants agreed that the health authority should simplify existing health protocols and adapt them for emergency contexts to improve the provision of MRH services during a disaster. For example:

> *All protocols should be simplified so that they are working in very minimum settings such as during disaster response. For example, sterilisation procedure should me made different with normal setting…because during emergency all modern and advanced technology equipment would not be available...* (HP, F, II, CHC 1)

This participant mentioned the urgency of preparing a simple protocol before a disaster, and highlighted concern about the applicability of guidelines and protocols that would be useful to ensure the continuation of MRH services in a low resource setting in the wake of a disaster.

Furthermore, another participant suggested the development of posters could be used to prepare those protocols before a disaster.

> *We should have a simple algoritma (protocols) to be used during a disaster…Put them on a poster, so that during an emergency we will easily follow those protocols by reading on the wall. By having them written, people will not blame us for malpractice...* (HP, F, II, CHC1)

Health personnel participants proposed working towards simplifying and presenting protocols on MRH issues before a disaster emerges so that those providing MRH services would have time to familiarise themselves. Having these protocols simplified and familiarised would prevent malpractice when providing MRH services during a disaster. They suggested having simplified protocols on posters that could be easily followed and guide health personnel in real-time during an emergency response.

Policymakers: Making midwives ready; integrating MISP into midwifery curricula

For most policymaker participants, efforts to improve readiness to meet MRH needs during a disaster relied on the level of preparedness of health service providers. One policymaker voiced:

> *We should have enough number, if possible all, of health personnel to have the capacity to provide MRH services during a disaster…so far, we have been conducting training on Paket Pelayanan Awal Minimum - PPAM (MISP) on reproductive health in crisis settings to health personnel including midwives…but we aim to include it into midwifery and nursing curriculums as muatan lokal (optional module), so that midwifery and nursing students are equipped to work and deliver MRH services when there is a disaster. All health personnel should be equipped. We never know whether our duty stations are prone to disaster or not. Sometimes we do not bother with the hazards, then the following day we experience eruption, flood, landslide or any other disasters. Very unpredictable, that is why we should be equipped. These days, there are some universities teaching disaster management to their students in undergraduate and postgraduate degrees…but they are general disaster management. I would like to have something specific for students studying in the health field, because at the end of the day, they have to be also in the frontline and provide a response during a disaster.* (PM, F, J, 1)

This policymaker identified that having enough health personnel in terms of both quantity and quality as part of preparedness measures would support better provision of MRH during disasters. This demonstrated recognition of the lack of health personnel as well as the associated poor low capacity to respond to MRH needs during a disaster. Furthermore, this highlighted the ongoing efforts by the authorities to include disaster management, particularly MISP, into the midwifery curriculum as a *muatan local* (optional module). This

showed a consistent recognition that health personnel were one of the key responders on the frontline when a disaster occurs.

8.4. PREPARING FOR AN ENABLING ENVIRONMENT DURING DISPLACEMENT

All participants stated that the future DRM model should consider the surrounding environment, such as a well-designed temporary shelters and relocation site. Participants identified factors that would create an enabling environment in the event of displacement through having access to temporary shelters and houses that were well-designed, offered protection, safety and security, and were equipped with acceptable basic facilities (e.g. health posts) to enable the appropriate provision of MRH services to affected people. Some participants expressed the need for continuing the disaster response up to the relief and recovery phases, whereas others emphasised the importance of considering the local culture and context when designing emergency response interventions.

Women: Ensuring protection and meeting people's basic needs

All women participants wanted to have a better temporary shelter that was clean, hygienic, secure and friendly for pregnant women. One woman stated, '*I hope a temporary shelter has a clean water facility…also enough bins to throw garbage, including for used sanitary napkins and baby diapers*' (Woman, II, Village 2). This showed the expectation for facilities to meet the basic needs of affected people, with participants arguing that women's unique need to use sanitary napkins exists even during a disaster. Therefore, meeting such needs by providing appropriate basic hygiene and sanitation facilities in a temporary shelter was considered crucial.

Furthermore, some women stressed the importance of having a safe and secure temporary shelter in a future disaster response setting. One woman said, '*Women, including girls and pregnant women…and older women should feel safe in the temporary shelter. It should have proper lights during night time…also security in place*' (Woman, II, Village 1). Participants identified the importance of having secure access during the night time and ensuring good lighting facilities in temporary shelters. Not having good lighting was seen as placing women at high risk for rape or any other gender-based violence.

Finally, all women participants stated the importance of preparing proper houses for affected people to continue their lives. One woman stated:

> *People need proper houses to live after a disaster, not tents. A house is normal while tent is not a normal way to live…The government should build proper housing with three-bedroom houses, not one-bedroom houses…people will have more headaches with small houses.* (Woman, II, Village 1)

This comment suggested the importance of getting life 'back to normal' after a disaster. Participants felt that in a post-disaster setting, providing tents to shelter affected people was not the right solution. Women believed that the government should rebuild well-designed houses that considered both physical (e.g. functionality) and non-physical aspects so as to provide protection, well-being and security for affected people. Participants argued that a one-bedroom house was not appropriate for a family, as it created other social problems in post-disaster settings, including health and MRH issues.

Community leaders: Considering privacy for couples—frequent monitoring visits at relocation places to check the living situations

The community leaders also expected the future DRM to design temporary shelters that considered privacy and confidentiality aspects of the affected people who would be using the facility. One community leader stated:

> *It should be better than what we experienced in UKA temporary shelter…There should be a separator between one family and others. Ideally a room with an appropriate wall. Although it is a temporary shelter, the family will have privacy and security…The couple will enjoy and be able to appropriately meet their sexual and reproductive health needs…* (CL, FGD, Village 1)

The statement demonstrated the need for a separate space for each family in a temporary shelter. Furthermore, this showed how sexual and reproductive health needs existed even during a disaster, and meeting those needs was considered crucial.

Community leaders mentioned the importance of providing appropriate land for affected people in a relocation place and checking whether affected people were able to maximally use that land to start their new lives. One community leader said:

> *BPBD to give people land and educate them on what is best to plant in those lands. After transferring people to a new relocation place, it does not mean*

> *the work is already finished. They have to visit people as frequently as they come to a temporary shelter…for example, to check if people are able to plant and make use the land for planting and for business. Also, to check whether people are independent, have livelihoods and ready enough to start new lives.* (CL, M II, Village 1)

This community leader stated the importance of regular monitoring and listening to feedback from affected people about whether they were able to return to normality. The statement highlighted the importance of providing land for affected people and ensuring they were able to make use of it, create their livelihoods and start new lives (e.g. *'After transferring people to a new relocation place, it does not mean the work is already finished'*). Participants argued that situations where affected people had been given new land in a relocation place still required close monitoring.

Health personnel: Treating affected populations and health service providers with dignity and respect

Similar to women and community leaders, health personnel participants identified that new temporary shelters should be designed based on the local context that also valued safety and confidentiality aspects. They also expressed the desire to have a proper shelter for service providers who were assigned to a temporary shelter. One participant stated:

> *There should be a 'tenda curhat', a tent/space where the family could speak heart-to-heart. This could also be used as a place for a couple to have sexual activities, discuss issues, or do any family activities…Also, to build a room in each temporary shelter that is dedicated to postpartum. Women who have just delivered their babies to sleep could stay there for at least a week. They should not sleep together with adults; this is to reduce the chances for mothers getting infections or any transmitted diseases. They can breastfeed easily without feeling embarrassed about opening their clothes.* (HP, F, FGD, CHC 1)

This comment reflected the perceived need to review and revise Indonesia's current policy on the '*tenda curhat*' concept. She argued that the purpose of *tenda curhat* should be expanded from couples having sexual intercourse to a room for a family or a couple to converse and *curhat* (speak heart-to-heart). Furthermore, participants identified the importance of equipping temporary shelters with a postpartum room for mothers and their babies to allow them to rest, breastfeed and prevent the risk for any infections or diseases. Similar to community leader participants, the participant stated, '*…this is to reduce the chances for mothers getting infections or any transmitted diseases. They can breastfeed*

easily without feeling embarrassed'. Having a specific room that included a 'breastfeeding corner' for lactating mothers would improve health conditions of affected people.

Finally, some health personnel mentioned the importance of building appropriate housing for health personnel assigned in temporary shelters and new relocation areas. One participant said:

> *If we were to be posted in a relocation place or new relocation place, then the facilities including a house for us (village midwives) should have at least two bedrooms. We will be bringing our family and living there. In a new relocation place, not only affected people who need to adjust with the place, the health personnel also need to do that.* (HP, F, FGD, CHC 1)

The participant suggested that the future DRM model should ensure the welfare of service providers working and providing MRH services in emergency settings. Having well-designed staff houses would allow health providers' families to stay with them and accompany them during duties. This demonstrated the perception that health personnel were also ordinary people that need consideration of their protection, comfort and welfare. The participant stated that in light of the workload and responsibilities of health personnel working in a disaster context, staff houses should be designed appropriately so that staff can perform at their best.

Policymakers: Ensuring everyone is comfortable in the clinic—Keeping family at the centre

Policymakers also believed the future DRM should have well-designed temporary shelters. They thought that the temporary shelters should have a clinic equipped with medical and non-medical equipment and supplies to ensure better access to MRH services. One policymaker said:

> *The clinic should have proper walls and doors. Not the one covered with cloths. This will ensure that pregnant women who receive treatment feel comfortable without [feeling] shy. This also makes the work of health personnel much easier. The clinic should have proper medicines, equipment and filing cabinets to store patients' cards.* (PM, M, J, 6)

This comment highlighted the desire for temporary shelters equipped with standardised health centres. This raised an issue around what constituted an acceptable standard for supporting health and MRH services, and for ensuring pregnant women and other users received services comfortably. Moreover, some policymaker participants noted the

importance of designing temporary shelters and relocation site using a 'family-centred' approach. For example:

> *Both temporary shelters and new relocation houses should follow the 'family concept'. This is the concept where the family should be together. With this concept, the husband, wife and their children are together…meaning, the authority should provide a tent or house where the family could continue their functions as a family…this is where each family have their room, even in a low resource setting, but their privacy, safety and security are maintained. Husband's and wife's reproductive health needs are also met.* (PM, M, J, 2)

This comment emphasised the importance of keeping family together/intact during and after a disaster. The statement described a 'family-centred' approach, by keeping the affected population at the centre of disaster response efforts. Having well-designed shelters and surrounding environments using a family-centred approach would enable couples to meet their sexual and reproductive needs and ensure pregnant women could interact with their spouses and be able to take care of their children.

8.5. MAKING STAKEHOLDERS READY

Participants stated that the future DRM model should place more emphasis on preparedness measures, such as the creation of an evacuation plan at the village level, enhancement of communication among stakeholders, using the role of religious leaders in disaster preparedness, development of hazard-specific emergency plans, improvement of local-level authorities disaster management capacity and strengthen ties between development initiatives and the DRM agenda.

Women: Having an evacuation plan at the village level, stressing that communication is essential among policymakers

For the participating women, the future DRM model should include a village plan to ensure the community was prepared when a disaster happened. For example, one woman said, '*Our village should have a plan! We should be told where to go and what to do when an eruption occurs…so that all villagers know it…We will do what is mentioned in the plan'* (Woman, II,

Village 1). This comment demonstrated the importance of creating an evacuation plan specifically for a disaster-prone village and sharing that plan with the community so that they were familiar with what to do. Sharing the evacuation plan with the community was perceived as ensuring readiness during a disaster.

Some participants noted that having a disaster or evacuation plan ready before a disaster would empower pregnant women and other community members during a disaster. One woman elaborated about the increased level of readiness if such a plan was in place.

> *If we know where to go during running and right after a disaster, we will feel more relief. We wanted people to run together and going in the same direction...When we are educated and aware of the plan, even a pregnant woman could help taking care of her family and others while running.* (Woman, II, Village 2)

This comment highlighted the advantages of having a mass evacuation plan that included a pre-identified route. Participants believed an evacuation plan should provide direction for the community on what to do and where to go when in the case of a disaster, and described the implications of a plan for people, including women who were pregnant. This would also mean that pregnant women could play an essential role in helping others during a disaster because they were aware of the evacuation plan and knew what to do.

Furthermore, most women participants voiced the importance of better communication among the authorities as the standard before a disaster arises. They argued that better communication would result in better management during a disaster response. One woman noted that, '*When authorities did not communicate better, we…people…could easily see their work…messy and out of control*' (Woman, II, Village 1). That woman wished that the authorities would improve their communication mechanisms. She stated that practising effective ways to communicate with the people would help in managing a disaster. This showed that ordinary people sensed whether their authorities were working well. People were able to judge whether the authority was able to manage a disaster appropriately. Similarly, another participant noted:

> *I hope in the future, Bapak dan Ibu di sana (policymakers) to talk more one to each other...Meet more often, so that when there is a disaster, they know one to each other and can work better…[laughed]…If not, we will get confused...I do not want the 2010 story to happen again where our Bupati*

> *sent us back home and say it was okay…actually he did not know what to do because they (authorities) did not talk one to each other. We people were angry at that time...We were treated like ping pong.* (Woman, II, Village 1)

This woman expressed hope for better coordination among policymakers. She felt that in the past, she had been bounced around between services because of the lack of communication (i.e. '*treated like ping pong*'). She wished the authorities would improve their communication mechanisms before a disaster event so they '*know one to each other and can work better*' together during an emergency period. Participating women agreed that better communication among authorities should be the core of every disaster management programme. Policymakers, according to these women, should be able to communicate with each other effectively so the communities were guided accordingly and had civil order to keep control.

Community leaders: Using religious faith as a means to cope with stress during disasters

Most community leader participants believed coordination meant that health personnel and other stakeholders should involve religious leaders in preparedness activities. They recognised the importance of spirituality and faith in disaster preparedness and response.

> *Health is a part of faith. Faith is part of belief. Belief is mentioned in every religion…Health personnel should work together with other parties including with religious leaders. Before, during and after a disaster, we (religious leaders) could and should help in providing support to the affected population, including pregnant women and their husbands…* (CL, M, II, Village 2)

Community leaders felt that religious leaders could help to build resilience in the community before and during a disaster. For community leaders, involving religious leaders in preparedness activities was important, as religious faith was a means for people, including pregnant women and their husbands, to cope with stress and other emotional states during disasters. Religious leaders, particularly in the Indonesian context, can help encourage and uplift people's spirits during troubled times. Prayer can bring relief to people and reassure them during a difficult time.

Health personnel: Creating a hazard-specific emergency health plan with local people; aligning the plan with relevant stakeholders

For most health personnel participants, having hazard-specific emergency health plans in disaster-prone areas would help to better prepare for a disaster. They hoped that such plans

would be developed in close consultation with local people. They also hoped that the plans would be shared and aligned with relevant stakeholders. For example:

> *Health authorities in areas around Sinabung and other areas that have active volcanoes should have a proper plan during eruptions…not a generic plan...This will save time when they provide health and MRH services. Their plan should be shared with BNPB (disaster management authority) and make sure that when designing a temporary shelter, they include health facilities and 'bilik mesra/bilik curhat'. They should also involve the local communities.* (HP, M, FGD, Village 1)

This participant articulated their wish that health authorities in disaster-prone areas would develop their own disaster plan. He argued that having hazard-specific emergency health plans would help in ensuring that work during the emergency phase would meet the MRH needs of the population, as having specific plans ready in advance '*will save time when they provide health and MRH services*'. Furthermore, it was highlighted that the hazard-specific emergency health plans should be developed along with local people so that the key activities and priorities suited the local context. Participants cited the example of *bilik mesra* that were built in the UKA temporary shelters during the 2013 eruption response that were not used because the design was not consistent with local culture. Finally, participants agreed about the importance of sharing and aligning any plans with other stakeholders.

In contrast, other health personnel criticised the intra-health sector coordination. They argued that internal coordination in the health sector needs to be improved. For example:

> *I think health authorities should speak more to each other more...DINKES KabanJahe (district health authority) should speak to Puskesmas (community health centre) and DINKES Propinsi (provincial health authority), particularly about areas nearby Mount Sinabung and other disaster-prone areas. They should think and prepare what to do in case of a disaster so that health services will be available to affected people including pregnant women.* (HP, M, II, CHC1)

> *I feel that when a disaster happens, we (health personnel) still do not know what to do. This is because we did not work and plan together. Still, those who are doing maternal health did not talk a lot and share with other departments, including those responsible for HIV programme, kesling (environmental health) and others...It would be good to talk one to each other so that when an emergency happens, we could move forward together.* (HP, F, II, CHC2)

These two participants identified room for improvement within the health sector. One argued that there was a lack of coordination between health authorities from the central, provincial, district, sub-district and village levels. The other stated that there is a lack of coordination between one sector and other sectors within health. She noted how those who are dealing with maternal health need to share and talk more with those who are responsible for communicable diseases, environmental health and others. This statement showed the importance of vertical and horizontal coordination among health actors, and highlighted that MRH does not stand alone. The provision of MRH services needs support from other health units. Lack of coordination and internal communication in the health sector, according to these participants, resulted in '*still do not know what to do*'. This created delays in meeting MRH needs during a disaster.

Policymakers: Linking development and preparedness, the need to increase the capacity of local authorities because of geographical challenges

For policymakers, the future DRM model should be based on strong cooperation among stakeholders, including communication when developing contingency plans. One policymaker advised:

> *We have been providing training to stakeholders at provincial and district levels on how to develop a contingency plan…to make them better prepared. I think they should know how to create a plan, but not sure, whether they cooperate one to each other. So could be many so-called; emergency plans these days…but whether they are sharing those plans with the upper and lower level...and with those in the right and left sides…If they are sharing, they will become strong and smart plans…I think we lack cooperation here.* (PM, M, J, #4)

That participant identified a need to improve coordination among stakeholders and indicated that the existing disaster management capacity remained limited in each sector. There was a clear need to enhance communication among sectors, as well as share information and resources. Policymakers admitted that there was room for improvement concerning multi-sectoral cooperation in designing and sharing emergency plans. Participants were aware that a good contingency plan should be created by and shared with different stakeholders, because each authority brings its own expertise and capacity.

Furthermore, some policymaker participants identified *Dana Satu Milliar Desa* (One Billion Rupiah Fund for Villages) as a key resource for building capacity for preparedness at the village level. One stated:

> *In each Dana Satu Milliar Desa plan document, we ask each village to identify types of hazards in their respective village. This will help them to identify activities and allocate budget to use when there is a disaster in their village…I hope they are considering buying and stockpiling essential commodities to be distributed to pregnant women, children, elderly and other vulnerable groups during a disaster.* (PM, F, M, #3)

The policymaker argued that the *Dana Satu Milliar Desa* was another avenue to better-incorporate preparedness and response plans at the village level. This showed the need to review the current purpose of the *Dana Satu Milliar Desa*. The fund that is currently meant for village development could be used for preparedness-related activities. In other words, there should be a strong link between development and DRM agendas. Some initiatives under the development agenda (i.e. *Dana Satu Milliar Desa*) could be used to better prepare and build the resilience of the community at the village level.

Finally, most policymakers testified that the ability to respond to a disaster must rely on the capacity of authorities in managing disasters. Policymakers identified the need to improve the capacity and readiness of local authorities to respond to a disaster given the size of the country, as fully relying on the central government to provide a response does seem not possible. For example:

> *Indonesia is a big country. Hence, preparedness is the key. These days, the indicators in to provide emergency response in less than 24 hours…Imagine if tomorrow there is a disaster in the eastern part of Indonesia? How can and how fast people from Jakarta could come and provide service? It will be challenging…so talking one to each other before a disaster in the key.* (PM, F, J, 5)

This policymaker argued that the key to preparedness was building the disaster management capacity of local authorities. This highlighted the importance of building capacity at the local government level before a disaster arises because of Indonesia's geography. The geography of the country was considered a key challenge to providing an immediate response during a disaster. Therefore, he emphasised creating a communication mechanism by '*talking one to each other before a disaster is the key*' to better-preparing responses during a disaster.

8.6. SUMMARY

This chapter examined the perspectives of women, community leaders, health personnel and policymakers at the district, provincial and central levels regarding a future DRM model that better integrated MRH services. First, participants shared their views on how the DRM model should be implemented at the community level. Some women and community leaders identified the importance of educating pregnant women, their husbands and wider communities on disaster management, including the roles to play to ensure the safety of pregnant women during the emergency response. They argued that education for pregnant women should be part of MRH services, including antenatal care. Furthermore, health service providers, including midwives, could play an important role in educating pregnant women. For health personnel participants, prioritising pregnant women during the evacuation period would prevent them from experiencing unwanted consequences during disasters, contending the importance of adopting the existing SIAGA programme in the context of disasters. Finally, for policymakers, the future DRM model was seen to need strong preparedness measures, including training and effective dissemination of disaster guidelines to the community.

Second, participants shared different views related to key interventions that need to be implemented to prepare for the better provision of MRH services in a future disaster. Women participants felt that to provide MRH services during a disaster, health providers should be equipped with very specific skills and knowledge. An important aspect was that respect from communities for health providers who are skilled and able to provide MRH services during a disaster was paramount. Community leaders described the importance of stockpiling MRH equipment and supplies to ensure the continuation of services during disasters. Health personnel felt that health authorities should prepare by simplifying existing health protocols and adapting them for the emergency context. Finally, policymakers drew on their fiscal, political and legislative mandate to ensure the level of preparedness of health service providers, which included integrating MISP into the midwifery curriculum, as a *muatan local* (optional module).

Third, participants shared their views related to key measures that should be considered to ensure a better surrounding environment during displacement so affected people would be

enabled to start their new lives and meet their MRH needs. This included a perception of having better temporary shelters and relocation site for the affected population. All women participants wanted better temporary shelters that were clean, hygienic, secure and suitable for pregnant women. They also mentioned the importance of appropriate housing. The community leader participants expected to have purpose-built temporary shelters that accommodated the need for privacy and confidentiality. Appropriate shelter to enable them to start new livelihoods and continue with their lives was also noted as important. Furthermore, health personnel participants identified that future temporary shelters should be designed based on the local context, while valuing the safety and confidentiality aspects. They also wished to have a proper shelter for service providers who were assigned in the temporary shelters and relocation site. Finally, policymakers voiced concerns related to the provision of well-designed temporary shelters that supported the provision of MRH services, stating that temporary shelters should have clinics equipped with medical and non-medical equipment and supplies, and both temporary shelters and new location health facilities should be built using a 'family-centred' approach.

Finally, women, community leaders, health personnel and policymakers described the way authorities managed the DRM before a disaster occurs. Women participants stated the importance of having a village disaster plan that included an evacuation plan. They also voiced the importance of having better communication among the authorities before a disaster arises. They argued that better communication resulted in better management during a disaster response. The community leader participants mentioned the need to count on religious leaders in preparedness activities and involve them during coordination with health personnel and other stakeholders. They recognised the importance of spirituality and faith in disaster preparedness and response. Health personnel expressed that having hazard-specific emergency health plans in each disaster-prone area would help to be better prepared for a disaster. They wanted such plans to be developed in close consultation with local people. Furthermore, they argued the need to improve coordination inside the health authority. Finally, policymakers stated that the future DRM model should have strong cooperation among stakeholders, including communication while developing contingency plans. They also identified *Dana Satu Milliar Desa* as a key resource for building capacity and preparedness at

the village level, as well as outlining the need to improve the capacity and readiness of local authorities to respond to a disaster.

Overall, this chapter identified the views of the future DRM model that better integrates MRH. The findings revealed that the future DRM model should emphasise educating pregnant women and communities on what to do during a disaster, as well as improving the capacity of health service providers to ensure they would be ready to respond during a disaster. Furthermore, when communities are displaced, participants highlighted the importance of ensuring that the surrounding environment included adequate and well-designed temporary shelters and relocation sites that would help affected people start their new lives and meet their MRH needs. Finally, participants identified the importance of preparedness as key elements of a future DRM model.

This next chapter discusses the overall findings with respect to the research question and its objectives.

Chapter Nine: DISCUSSION

9.1. INTRODUCTION

This chapter provides a synthesis of the main findings in the context of the research question and objectives. The findings are critically compared and contrasted with relevant literature to determine areas in which they concur, challenge and extend the existing body of knowledge, in the context of the SEM (Bronfenbrenner, 1994, 2005; Bronfenbrenner & Morris, 1998) and diagnostic event approach (Moore, 1987).

9.2. SYNTHESIS OF THE FINDINGS IN RELATION TO THE RESEARCH QUESTION AND OBJECTIVES

This retrospective single case study used a qualitative design and aimed to understand the process of the integration of MRH into DRM practice in Indonesia. The main research question was:

'How does Indonesia integrate MRH into DRM?'

The objectives were:

1. To examine the experiences of accessing MRH services in a past disaster;
2. To analyse current DRM practice; and
3. To explore views for a future DRM model.

A significant contribution of this study to new knowledge was its use of the Yin case study model with boundaries of time, event and process to understand how far Indonesia had integrated MRH into DRM practice. These boundaries enabled an in-depth understanding of how Indonesia integrated MRH into DRM practice from the perspectives of women, community leaders, health personnel and policymakers in terms of the provision of MRH during the selected disaster, and their perspectives for future disasters. The use of a real past disaster event captured the experiences of a broad spectrum of health users and providers. The findings were also triangulated.

This study made an original and novel contribution to understanding the process of integration of MRH into DRM in Indonesia by providing insights related to the government's efforts to prioritise MRH needs during a disaster. Additionally, the study provided an in-depth understanding of the need for clear strategies and plans in post-disaster settings, as well as the importance of linking humanitarian and development agendas.

This study found that the experiences of accessing and providing MRH services during the 2013 eruption of Mount Sinabung were seen by the stakeholders as having improved from previous disasters, but still facing several challenges. Although there was considerable effort to provide MRH services in the disaster response, the level of readiness appeared to be insufficient. Women noted the insufficient medicines available, incomplete health facilities and issues with confidentiality of health information provided to health personnel. Health personnel highlighted that their capacity and professional knowledge for meeting MRH needs during a disaster were insufficient. In addition, medical supplies were limited, and infrastructure inside the temporary shelters was poor.

This study also revealed a number of issues in relation to DRM practice in the relocation site. The affected people faced considerable difficulties in starting their new lives and livelihoods, as the new location required considerable adjustments when compared with their old villages. Limited infrastructure in the new location, including minimum facilities in the health posts and the introduction of the national health insurance scheme also affected MRH services. Furthermore, affected people faced difficulties in adjusting to new lives in one-bedroom houses. This case study found evidence of inability to meet the MRH needs of couples, which resulted in reluctance to plan for pregnancy because of hesitation to have sexual intercourse given the privacy, safety and confidentiality issues.

This study also captured views for future DRM that better integrated MRH in Indonesia. Participants' narratives identified the importance of educating pregnant women, their husbands and communities who live in disaster-prone areas on best practice during disaster management responses through posters and flyers as part of routine antenatal care, postnatal care and related MRH services. Participants perceived a lack of readiness in terms of knowledge about providing services during disasters among health personnel. They highlighted the need to stockpile commodities before a disaster, and noted the simplification

and adoption of MRH guidelines in disaster settings was crucial to ensure the continuation of services and provision of life-saving interventions. Furthermore, there was a need for well-designed shelters that considered non-physical aspects to provide a conducive environment to enable people to meet their sexual and reproductive health needs. The study also revealed that the government should involve religious leaders into preparedness activities, as they play important roles within their communities. Furthermore, the government needs to focus on building the capacity of local authorities to manage disaster risks, especially as the current political structure in Indonesia uses a decentralisation approach.

Overall, the present findings showed evidence of effort to integrate MRH into DRM by the Government of Indonesia. The study captured voices from the affected communities regarding improved provision of MRH before, during and after a disaster. The research concluded that not meeting MRH needs resulted in consequences that affected the overall health status and resilience of the country as a whole. Furthermore, better provision of MRH required shared responsibilities among stakeholders, as it is not a stand-alone issue but rather influenced by the surrounding environment.

9.3. CONTEXTUALISING THE FINDINGS WITHIN A SEM APPROACH

The findings presented in Chapters Six, Seven and Eight showed that MRH needs during disasters are affected by individuals, the environment, and overall culture, beliefs, policies and systems. These results contribute to the existing body of knowledge, particularly in the context of MRH integration to DRM in Indonesia.

The discussion is divided into three main headings according to the research objectives: **1) lack of standards for the provision of MRH services during the 2013 eruption of Mount Sinabung; 2) room for improvement in the integration of MRH into current DRM practice; and 3) future DRM model with better integration of MRH**.

The critique of the findings is structured using the SEM (Bronfenbrenner, 1994, 2005; Bronfenbrenner & Morris, 1998) and diagnostic event approach (Moore, 1987), as presented in the following diagram.

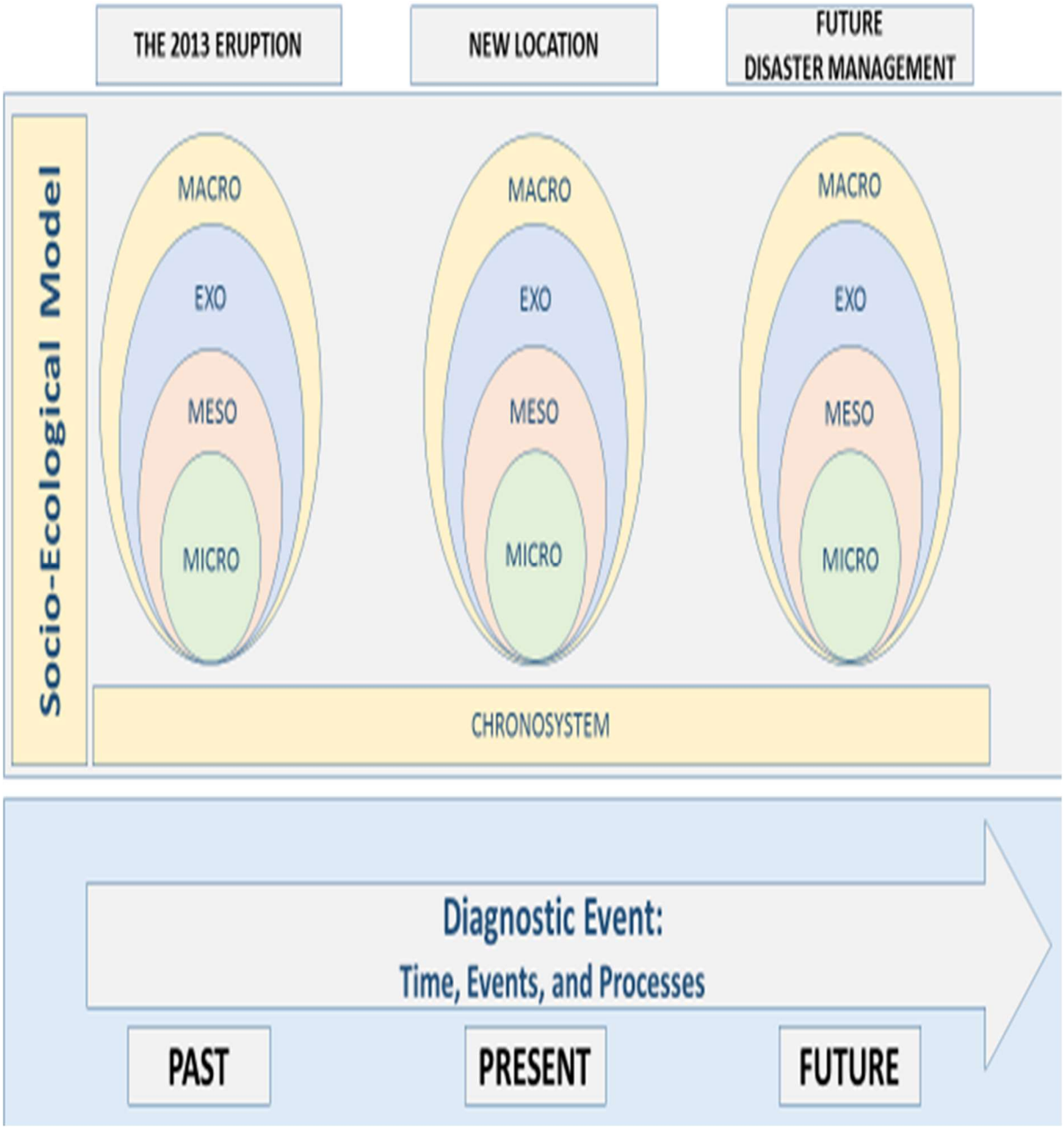

Figure 25: Application of the socio-ecological model and diagnostic event approach to help to examine the findings (Bronfenbrenner, 1994, 2005; Moore, 1987)

In each section, the SEM (Bronfenbrenner, 1994, 2005; Bronfenbrenner & Morris, 1998) is applied to structure the layering factors that contributed to the integration of MRH and DRM in the past, present and future that influenced the provision of MRH services in the disaster. As stated in Chapter Three, the SEM comprises micro-, meso-, exo- and macro- levels, and a chronosystem (Bronfenbrenner, 1993, p. 645). In this chapter, the findings are presented as follows.

- **Micro-level** captures findings related to how the disaster and post-disaster affected individuals' status and condition;
- **Meso-level** explains findings associated with the provision of MRH services during the disaster and post-disaster;
- **Exo-level** examines findings related to the surrounding environment including socio-cultural factors that influenced the provision of MRH services of the case study; and
- **Macro-level** analyses findings associated with the overall leadership, coordination, systems and policies while managing the disaster and post-disaster.

Another layer, called the chronosystem, includes the dimension of time (Bronfenbrenner, 1976; Bronfenbrenner & Morris, 1998, p. 996), and is embedded in each level of discussion. The diagnostic event approach (Moore, 1987), described in the philosophical underpinnings/methodology covered in Chapter Four, clarifies the relationships between the event and the process. In this chapter, the chronosystem is used to structure the findings associated with the process and time. The first heading, 'Lack of standards during provision of MRH services during the 2013 eruption of Mount Sinabung', captures findings related to past experiences of accessing MRH services during emergency. The second heading, 'Room for improvement in the integration of MRH into current DRM practice', discusses findings associated to the present concept of DRM and how MRH is currently being provided. The last heading, 'Future DRM model with better integration of MRH', examines findings related to future DRM, whereby MRH services are better integrated.

9.3.1. Lack of standards for the provision of MRH services during the 2013 eruption of Mount Sinabung

This section examines participants' experiences of accessing MRH services during a past disaster. The SEM micro-level (Bronfenbrenner, 2005) examines the scale of the disaster, associated perceptions of the impact, people's belief attribution of the disaster and the community's resilience. The meso-level explains the accessibility of MRH services and the capacity of health service providers. The exo-level critiques the setup of temporary shelters and the associated infrastructure, and considers how they influenced the provision of MRH services. Finally, the macro-level examines the efforts of policymakers in managing the

disaster, including efforts to include MRH services as part of the emergency response, impacts of prolonged emergency response and the transition period between moving from temporary shelters to the relocation site.

As presented in Chapter Six, participants' experiences of assessing MRH services during the 2013 eruption revealed that the event disrupted the provision of MRH services and increased the vulnerability of pregnant women. Although there were efforts to integrate the provision of MRH services into DRM, these services were considered inadequate because of limited facilities, lack of supplies, competency issues among health personnel and the conditions in the temporary shelters that influenced how affected people accessed MRH.

Micro-level: The disaster increased the vulnerability of pregnant women, disrupted the provision of MRH services and was interpreted in different ways

The micro-level examines the initial reaction to the disaster, particularly focused on perceptions related to beliefs of causation, resilience and the scale of the disaster and its impact. The findings showed that the 2013 event was considered a large-scale volcanic eruption, which increased the vulnerability of pregnant women, and destroyed houses and facilities in the affected villages.

Participants described how women's vulnerability was increased by their physical state of being pregnant and feeling the need to protect their babies, which made their escape more difficult. The volcanic ash impacted their health, including concerns with their eyes and breathing. This finding was similar to other studies conducted at national and global levels that showed women were more vulnerable than men during disasters (Kassebaum et al., 2016; Onyango et al., 2013). For example, more women were injured than men during the 2004 tsunami in Indonesia. One reason for this was the readiness of women to respond to disasters; as part of local culture, women should bear children, so when the disaster occurred they take responsibility for keeping the family members safe when escaping. In a big event such as the tsunami, they did not have time to run fast because they carried their family members (Mulyasari & Shaw, 2013). Furthermore, traditions in Indonesia place women in a disadvantaged position because they have to stay home. Therefore, women are usually unaware of the situation outside their house. They rely on husbands and other family members to support them, which makes them vulnerable to disaster (Smith-Hefner, 2007). At the global level, several studies argued that men and women were not equally affected by

natural disasters (Bradshaw & Fordham, 2015; Gaillard et al., 2017; Hamidazada, Cruz, & Yokomatsu, 2019). Disasters put pregnant women at risk for increased adverse health outcomes, including unsafe abortions, complications, disabilities and death (Sohrabizadeh et al., 2016). During the 2015 major earthquake in Nepal, pregnant women feared stillbirth or spontaneous abortion due to trauma, and believed that the disaster affected the foetus and the mental health of pregnant women (e.g. severe anxiety and post-traumatic stress disorder) (Thapa & Acharya, 2017). Therefore, disasters slowed improvement of MRH status (Kassebaum et al., 2016) and increased vulnerability to poor maternal and reproductive health outcomes, thereby contributing to higher maternal morbidity and mortality (Sohrabizadeh et al., 2018). Therefore, the scale of the disaster heightened the vulnerability of pregnant women.

This study revealed that the gravel, ash and hot cloud damaged entire villages, including the buildings of *Puskesmas*. This caused disruption to the provision of MRH services. This finding was consistent with studies that revealed disasters caused disruption in the provision of MRH services (Chaudhary et al., 2017; Chi, Bulage, et al., 2015b; Sajow, Water, Hidayat, & Holroyd, 2019). Although Indonesia is situated on converged global tectonic plates that make it highly prone to earthquakes, most health facilities were not designed to cope with natural disasters. Along with other infrastructure, health facilities get damaged during earthquakes, floods, eruptions and tsunami. This affects the provision of health services (including MRH services) during a disaster (De Goyet, 2007; Novianingsih et al., 2017). The disruptive and destructive consequences of disasters often result in economic loss and loss of life (Kuscahyadi et al., 2018). The 2006 earthquake in Bantul of Jogyakarta destroyed public roads and health facilities, including medicine and ambulances, as well as disrupting the provision of healthcare (including MRH services), which resulted in limited access to antenatal care for pregnant women (Widayatun & Fatoni, 2016).

Another interesting finding from this case study concerned the links between natural phenomenon and beliefs among people who lived in rural areas of Indonesia. Study participants interpreted the eruption in different ways. For example, some women believed the eruption was a test from God. They linked causation to people's behaviour of prioritising business interests over religious duties. Other participants argued that the eruption happened because nature was 'angry'. These findings were consistent with previous studies

that showed beliefs and ethnic context play significant roles during disasters in Indonesia (Donovan, 2010; Gaillard et al., 2008). The behaviour of people in Indonesia when faced with natural hazards is deeply influenced by the cultural, social, economic and political context. An ethnographic study in Bali by Donovan (2010) that aimed to understand how people viewed the 1963 eruption of Mount Agung found that cultural and socioeconomic factors influenced community reactions to volcanic hazards, as local communities believed it was the most sacred volcano. Indonesia has a diverse, complex and deeply devout connection with the environment. As a consequence, people often rely on traditional, animistic beliefs during a crisis (Donovan, 2010). This offers strong evidence related to linkages between natural phenomenon and beliefs, particularly in rural communities in Indonesia.

This case study revealed that experiencing previous eruptions had increased participants' awareness regarding the nature of the eruption, particularly the direction of the travel of the volcanic ash. Having previously experienced a series of disasters, women and community leaders realised that they lived in disaster-prone areas. Learning from previous disasters had increased the level of resilience within communities and shaped local knowledge. This was considered part of a localised approach for DRR. When the 2013 eruption occurred, some pregnant women immediately left their houses and took basic and important items with them. These findings were similar to those of other studies that revealed local knowledge played an important role in mitigating the effects of a disaster on people who lived in rural areas of Indonesia (Alfi Rahman et al., 2018; Z Zulfadrim, Toyoda, & Kanegae, 2018; Zulfadrim Zulfadrim, Toyoda, & Kanegae, 2019). The *Smong* (tidal waves or tsunami) is a story that is passed from generation to generation for people on Indonesia's Simeuleu Island. The *Smong* was created after the Island experienced a tsunami in 1907, which was considered to be a big lesson for the local community. The *Smong* was believed to have saved the lives of Islanders when the 2004 tsunami occurred (Alfi Rahman et al., 2018). In a country such as Indonesia, it is necessary to bring together local knowledge and modern perspectives of disasters.

Meso-level: Insufficient provision of MRH during the disaster

The provision of MRH services during the disaster is reflected the SEM meso-level (Bronfenbrenner, 2005), specifically the accessibility of the MRH services and capacity of health service providers. The findings showed that during the 2013 eruption, there were

efforts to provide MRH services during the emergency response. However, there were also concerns related to accessing and providing these services.

The provision of MRH services during the disaster was seen as 'not up to standard'. Women and community leaders faced challenges when accessing MRH services, and complained about the medicines provided, incomplete facilities in the clinic and lack of confidentiality of health information provided to health personnel and how patients' medical records were kept. These findings were comparable with other disaster studies conducted at the global and national levels. Challenges to accessing information and services related to safe motherhood and family planning, including safe delivery of pregnancy with complications, were identified as key challenges during disasters (Chynoweth, 2008; Djafri et al., 2015; Tran & Schulte-Hillen, 2018). At the global level, several studies revealed that provision of MRH services during disasters lacked quality controls because MRH issues were not prioritised (Chynoweth, 2015), supplies and human resources were limited (Motamedi et al., 2009; Wayte et al., 2008) and coordination among stakeholders was lacking (Chi, Bulage, et al., 2015b; Wayte et al., 2008). Several studies conducted in different Indonesian disaster settings reported challenges in accessing MRH services (AHACentre, 2016; Djafri et al., 2015; Hapsari et al., 2009). During the 2006 earthquake in Jogyakarta, affected people had difficulty accessing MRH services and noted the poor quality of available services (Hapsari et al., 2009). These findings showed the level of readiness of meeting MRH needs during specific disasters in Indonesia was insufficient.

This study found that knowledge of disaster management and skills to provide MRH services during a disaster among health service providers were lacking. Although health personnel realised that their skills were insufficient, adherence to professional ethics meant they still had to perform during the disaster response. Consequently, they felt overwhelmed and stressed while providing MRH services to the affected population. These findings correspond with other studies that reported health personnel had limited skills and knowledge to respond to MRH needs during disasters (Hapsari et al., 2009; Nuruniyah, 2016; Sangkala & Gerdtz, 2018; Wayte et al., 2008). A study conducted during the 2010 eruption of Mount Merapi found that limited capacity of health personnel to provide services compromised the quality of healthcare and reduced patients' satisfaction with the overall health services provided

(Nuruniyah, 2016). That research concluded that meeting MRH needs during a disaster in Indonesia remains a challenge. To achieve effective disaster management at the community level in Indonesia, continuing disaster training for health service providers (including midwives and community health nurses) is crucial.

Finally, despite a lack of preparedness and knowledge among health personnel about meeting MRH needs during a disaster, the inadequacy of DRM policies and aligned strategies resulted in health service providers becoming overburdened. Health personnel described how they had to work extra hours in stressful and difficult environments. These findings were similar to those of other studies that revealed responding to disasters resulted in overburdened health service providers, including high levels of fatigue and stress (Sangkala & Gerdtz, 2018; Wayte et al., 2008; Widayatun & Fatoni, 2016). During the 2006 earthquake in Bantul Jogyakarta, midwives who were part of emergency response teams provided general health services as well as MRH services. This multi-tasking and taking on many responsibilities resulted in them becoming overburdened and affected the quality of services provided (Widayatun & Fatoni, 2016).

Exo-level: Challenges in meeting MRH needs during displacement

The surrounding environment, which reflects the exo-level of the SEM (Bronfenbrenner, 2005), examines the setup and infrastructure of the temporary shelters, and how this was seen to influence the provision of MRH services. The temporary shelters had basic facilities for the affected population; however, despite these efforts, participants mentioned that the environment in the temporary shelters was relatively poor. This included issues related to privacy, security, hygiene and sanitation. Efforts to meet the MRH needs of couples were made, but were considered inappropriate because of cultural issues, meaning the facilities provided were not maximally used. Finally, participants acknowledged the support provided by non-government organisations to complement government efforts to protect and meet the basic needs of the affected population in the temporary shelters during the disaster.

The government of Indonesia made considerable effort to providing temporary shelters with basic facilities for the affected population, including public latrines, kitchens and clean water taps/points. However, despite these efforts, participants mentioned they faced challenges while living in temporary shelters. The poor set up of the temporary shelters resulted in issues

related to safety, security, hygiene and sanitation that posed threats to the affected population, including increased risks for sexual violence. These findings were consistent with other studies that showed poor standards of housing and accommodation during displacement resulted in health and reproductive health exacerbations, including trauma and gender-based violence (Chaudhary et al., 2017; Fisher, 2010; Nakhaei et al., 2015; Noji, 2005). Hygiene and sanitation issues appear to be common challenges faced by affected populations during displacement.

Furthermore, participants in this study faced challenges in access to clean water, and experienced safety and security issues when using public bathrooms and toilets, particularly during the night time because of poor lighting. These findings were similar to those of other studies conducted at international and national levels. During the 2009 Padang earthquake in Indonesia, Djafri, Chongsuvitatwong and Gater (2015) found that shortages of water and other basic needs affected the provision of MRH services. Security in temporary shelters was also an issue because of the poor set up of infrastructure. Similarly, a study conducted during the 2006 earthquake in Jogyakarta revealed that lack of clean water and poor hygiene contributed to diarrhoea and other nutritional issues among young children, women and other members of the affected population living in temporary shelters (Hipgrave et al., 2012). In addition, at the global level, a study conducted in Iran after the 2003 Bam earthquake revealed a lack of provision of hygiene supplies among affected women of reproductive age. This had several negative impacts, including unwanted pregnancy, unsafe abortion and trauma (Motamedi et al., 2009). Another study involving Iraqi refugees in Jordan found that security was one of the main concerns among women and girls (Chynoweth, 2008). In a poorly designed temporary shelter, pregnant women find it challenging to meet their unique needs, including hygiene, safety and security.

Furthermore, this study revealed that facilities in temporary shelters that were meant to meet the MRH needs of the affected population were not being used properly because of design and cultural concerns. Study participants acknowledged the good intentions behind providing these facilities, but regretted the officials' lack of consultation with local people. Participants mentioned that the authorities did not consult them when setting up the *bilik mesra* (a room for couples to meet and have sexual intercourse), meaning people were hesitant to use them. The design of this facility was not consistent with the local culture, as it was created without

proper doors. *Bilik mesra* is not a new concept in Indonesia, and was used during the 2004 Tsunami in Aceh and 2006 Merapi eruption (Bambang, 2006). Given the diversity in Indonesia with more than 300 ethnic groups, each region may have different perceptions of the *bilik mesra* concept. For example, people in Karo have *Rakut Sitelu* (kinship system) where the daughter-in-law should respect her mother-in-law, meaning *bilik mesra* with a culturally discordant design caused embarrassment. Women participants stated that they felt too embarrassed to use the *bilik mesra* because they worried that after using and exiting the room, their mothers-in-law would be queuing outside. Interventions during disaster response should adhere to the Core Humanitarian Standard and Minimum Standards, in which an important aspect is adhering to the local context (Chynoweth, 2008; Sphere, 2018). Previous studies have highlighted the importance of acknowledging local culture, along with the involvement of local authorities and religious and community leaders in designing disaster response. Those findings indicated a need to advocate for policy changes to integrate MRH into various guidelines, including manuals for temporary shelters and camp management (Biehl, 2016; Chynoweth, 2008; Wayte et al., 2008). Designing appropriate and culturally sensitive reproductive services during emergency response is paramount.

Finally, the results showed that the support provided by the Indonesian Red Cross Society (e.g. the provision of clean water and distribution of basic items) was seen to help meet basic needs of the population during the displacement period. During a disaster, the local authority's capacity to respond may be limited because of destroyed communications and infrastructure, competing priorities and overwhelming needs. A study conducted during the 2009 earthquake in Padang revealed that local authorities were not able to provide an immediate response to the affected population. The study reported it took more than 1 year to recover water supplies. Furthermore, the unavailability of water supplies affected the living conditions of affected people, including maternal and child health status (Djafri et al., 2015). Therefore, having additional support from other stakeholders (locally, nationally and internationally), including from non-governmental and private organisations, is vital during disaster response. The increased involvement of non-governmental organisations in disasters has been acknowledged by several studies that recognised significant roles played by these parties during disasters (Allen, 2006; Benson, Twigg, & Myers, 2001). When the authorities faced a lack of coordination during a disaster in terms of collaboration and readiness in

managing relief operations, the 'aid community' (e.g. non-governmental organisations, Red Cross Society, private sector, United Nations, foreign governments and other organisations) provided assistance to cover the government's shortcomings, mainly through aid niching (Santiago, Manuela Jr, Tan, Sañez, & Tong, 2016). Interventions from the aid community are intended to support existing government efforts in case the scale and magnitude of a disaster are beyond the level of readiness of the affected authorities. However, there is some debate regarding the contributions of non-governmental organisations and other agencies during disaster response (Sapat, Esnard, & Kolpakov, 2019). To ensure the right support, the aid community should be consistent with humanitarian principles, which include 'humanity, neutrality, impartiality and independence' (Sphere, 2018, p. 50). Support for government is not only limited during disaster response, other stakeholders (locally, nationally and/or internationally), including non-governmental and private organisations, could also provide support in strengthening resilience of the community before a disaster occurs, as well as part of post-disaster relief and recovery measures (Allen, 2006; Benson et al., 2001). Involvement of the public sector and non-governmental organisations during disaster responses is paramount, as this support complements government efforts to protect and meet the basic needs of the affected population.

Macro-level: Efforts to include MRH into DRM

The overall government response, including policy, strategy development and implementation of disaster management, reflects the macro-level of the SEM (Bronfenbrenner, 2005). Specifically, this examines the efforts from the authorities in managing the disaster (including MRH services as part of the emergency response), impact of prolonged emergency response and the transition period when moving from temporary shelters to relocation sites.

This study revealed that the activation of the district level disaster management authority helped the disaster response mechanism. After the visit of the Indonesian President (central government) activated the district level disaster management authority, participants mentioned that the provincial and district level authorities provided better services to the affected population. This case study showed that activation of local disaster management authorities resulted in better responses, including logistics mechanisms, whereas prolonged living in temporary shelters negatively impacted the affected population. These findings were

consistent with other studies that demonstrated the Indonesian government's efforts to improve DRM and provide MRH services during various disasters. During the 2004 tsunami in Aceh, the Government of Indonesia attempted to implement MISP with support from the international community. Although there were several gaps in implementation of MISP, this helped save the lives of women and other affected populations (Krause & Matthews, 2005). As mentioned in Chapter Three, efforts to integrate MRH into DRM started in 2007 through the adoption and inclusion of MISP into the National Technical Guidelines for Health Crisis Response in Disaster from the Ministry of Health of Indonesia. This was continued in the country's 2010–2014 Strategic Plan of the Ministry of Health and in the current 2015–2019 Strategic Plan.

The government's immediate response to the 2013 disaster was seen as an attempt to regain people's confidence after failing/falling short in the 2010 eruption response. In 2010, the district-level authorities were not able to properly manage the initial disaster response, which incited anger among the affected population (Sukarna, 2016). Disaster events commonly create loss of public trust in government institutions (Uscher-Pines, 2009). For example, during Hurricane Katrina in 2005, much of the criticism focused on how the Federal Government managed the initial response (Han, Hu, & Nigg, 2011). During that event, failure to adequately respond resulted in citizens questioning the competence of the government, particularly the Federal Emergency Management Agency (Miller, 2016). During the 2008 earthquake in Southwest China, people trusted the central government more than the local government because of the national government's prompt response to the earthquake (Han et al., 2011). This suggests that disasters test community trust in their local and national governing bodies.

Moreover, this study revealed that living for a prolonged period of time in a temporary shelter created dependency and resulted in people's inability to resettle and start new lives. These findings were consistent with other studies that revealed prolonged humanitarian aid creates dependency among affected people (Sapat et al., 2019; Singh, Fischer-Kowalski, & Haas, 2018). It is recommended that a plan for recovery is developed as early as the situation permits (Singh et al., 2018). Furthermore, a study focused on the protracted conflict in Syria suggested that humanitarian workers and those who were involved in the disaster response must consider humanitarian ethics and possible implications for affected populations to

enable return to normality as soon as possible, rather than living in a prolonged emergency state (Brun, 2016). These studies reinforced the concept that some humanitarian assistance has questionable long-term outcomes in terms of sustainability and ability to build community resilience.

This case study revealed that the period after the affected people were moved out of the temporary shelters and given money to rent houses while waiting to be relocated to Siosar was described as the 'missing period'. This was because participants felt there were insufficient mechanisms to monitor the welfare of the affected people. Participants questioned the mechanism used for disbursement of money for living allowances for affected people, including monitoring and accountability of the use of that allowance. The findings indicated that there was a gap in monitoring accountability during the transition period from temporary shelters to relocation site. This finding contributed to the body of knowledge related to financial disbursement and accountability during aid distributions, particularly during transition from emergency response to relief and recovery phases. This finding was also similar to those of previous studies that critiqued the rationale and mechanisms for financial disbursement in various disasters (Baas et al., 2008; Tran, Dawson, Meyers, Krause, Hickling, & null, 2015). During the 2010 earthquake in Haiti, a study conducted by Ramachandran and Walz (2015) examined the accountability of international donors, non-governmental organisations and the government in managing, monitoring and evaluating the use of funds. That study found the Cash-Based Response/Cash Transfer Programme was critiqued in terms of its impact on the humanitarian response and effects on affected people. Furthermore, some argued that providing cash to affected people diminished the need for lengthy procurement, logistics, transportation and distribution of aid (Heaslip, Haavisto, & Kovács, 2016). In contrast, others have argued that it could give rise to accountability and fraud issues, including theft, corruption and misuse (Heaslip, Kovács, & Haavisto, 2018; Ramachandran & Walz, 2015). Therefore, careful planning from disaster response to recovery is paramount when managing disasters.

9.3.2. Need for improvement in integration of MRH into current DRM practice

This section discusses participants' concept of current DRM practice in Indonesia. The micro-level of the SEM (Bronfenbrenner, 2005) analyses the new relocation area in Siosar as well as the system used during relocation. The meso-level examines the facilities and system of delivering MRH services. Furthermore, the exo-level evaluates the facilities and infrastructure provided in Siosar that influenced people in meeting their MRH needs. Finally, the macro-level critiques the systems that were put in place in Siosar and leadership from the authorities during the rehabilitation and recovery phases.

This section considers the findings related to the research objective on the experiences and perspectives of living in the relocation site in Siosar, as presented in Chapter Seven. Although there were efforts to integrate the provision of MRH services into the recovery and rehabilitation periods, these services were considered inadequate because of limited facilities and supplies. In addition, the existing MRH services were not fully consistent with the six blocks of Health System Strengthening, and the environment in the new location hampered the efforts of affected people in meeting their MRH needs.

Micro-level: Starting a new life in a new place

The initial reaction when moving to the relocation site, captured under the SEM micro-level (Bronfenbrenner, 2005), considered choosing relocation in an area provided by the government, and the land provided to start new livelihoods.

This study found that the relocation to a new permanent site for the affected people was seen as positive. The relocation was considered a benchmark to end the prolonged stay in the temporary shelters as well as to start a new life. The results showed insights from those who opted for relocation in a concentrated area provided by the government, in contrast with those who opted for *relokasi mandiri* (independent relocation), as the relocation site in Siosar preserved the old villages and communities. The affected people in Siosar felt more resilient than before because they were kept together with relatives and people from the same village; this contributed to a sense of togetherness among the affected population. These findings were similar to another study that found despite failure in providing initial emergency response, relocating affected communities together to new places after the 2005 Hurricane

Katrina in the US produced positive long-term health effects for the affected people (Uscher-Pines, 2009). That study reported that the mental health status of affected people who lived in the relocation site was improved because of the feeling of being more secure in the new places (Uscher-Pines, 2009). Similarly, following the 2011 flash flooding in Queensland (Australia) and the 2011 earthquake in Christchurch (New Zealand), those who were resettled mentioned that they were in better conditions than before they moved (Ferris, 2015). Furthermore, previous studies revealed that governmental efforts to consult and engage with communities were instrumental factors in the success of resettlements (Authority, 2014; Ferris, 2015; Okada, Haynes, Bird, van den Honert, & King, 2014). Successful engagement with the communities affected by the disasters was attributed to the capacities and levels of readiness of the two governments (Australia and New Zealand).

In this study, women and community leaders raised issues with regard to the half-acre of land that they were given to start their new livelihood, because it was a relatively small area of land with different soil characteristics from their home villages. This challenged the affected people trying to start new lives in Siosar. These findings were similar to those of other studies conducted in various relocation sites in different post-disaster contexts. Those studies revealed that overall, relocation results in major socioeconomic challenges for affected populations (Arnall, Thomas, Twyman, & Liverman, 2013; Badri, Asgary, Eftekhari, & Levy, 2006). A study conducted in a resettlement area after the 1990 Manjil earthquake in Iran showed the long term significant adverse socioeconomic impacts among the resettled population, including employment, income, women's empowerment and lifestyles (Badri et al., 2006). In Bangladesh after the 2004 tsunami, fishermen who were relocated to higher ground that was relatively safe from another tsunami faced difficulties in starting their livelihood. This was because in the new place, they were far from the sea and could not fish (De Silva & Yamao, 2007). These studies highlight the importance of careful planning with attention to livelihoods when relocating affected people to new sites.

Meso-level: Plan for comprehensive MRH services through integration to the existing health system strengthening

The provision of MRH services in the new villages is described under the meso-level of the SEM (Bronfenbrenner, 2005). In particular, this examines the facilities and system of delivering MRH services. The results showed that despite having permanent buildings

dedicated as health posts, access to MRH services in the relocation site remained challenging because these services were no longer free, and limited services were available because of inadequate supplies and health personnel. In addition, the distance to the referral health facilities was an issue. Therefore, this study showed inadequate healthcare facilities directly impacted the provision of MRH services.

Other studies have argued for the need for planning for the provision of comprehensive MRH services as early as possible and that are initiated as soon as the situation permits (IAWG, 2018; WRC, 2011). A study conducted in post-conflict Aceh revealed inadequacies in Indonesia's healthcare system resulted in Acehnese people travelling to neighbouring Malaysia for medical treatment instead of accessing health services in Indonesia, which was attributed to lack of trust and failure in planning for providing and restoring the healthcare system in the post-conflict area after experiencing the man-made disaster for almost 30 years (C. Smith, 2015). The provision of comprehensive reproductive health post-event should be designed according to the Six Building Blocks of Health Systems (WHO, 2010). The Six Building Blocks of Health Systems contribute to the strengthening of health systems (including the provision of MRH services) that include service providers, health information systems, access to medicines and supplies, health financing and governance/leadership aspects. Careful planning for comprehensive MRH services by integrating the interventions into primary health services immediately after a disaster would improve the quality of services and reduce the vulnerability of affected people (IAWG, 2018). Disasters have a long-term impact on maternal health outcomes, including trauma and other mental health problems that affect mothers and their babies and other children. Pregnant women who experience a disaster face challenges beyond health issues, such as social and economic problems (Brunson, 2017). This highlights the importance of restoring the provision of comprehensive MRH services from the onset of a disaster.

Furthermore, these results revealed an unusual finding in that MRH services were no longer free-of-charge after the disaster. This affected people's ability to access and meet their MRH needs. To sustain the provision of health services, there should be allocation of sufficient government funding, including allocation funds of 5% from APBN (national expenditure budget), and 10% from *Anggaran Pendapatan Belanja Daerah* (regional expenditure budget) at both provincial and district/city levels (Indonesia MoH, 2009, 2018). Availability of health

financing to ensure the provision of health services (including MRH) are meant to ensure UHC in Indonesia, as the country is a signatory to the SDGs (Indonesia MOH, 2015a, 2018) and to universal access to sexual and reproductive health and rights (UN, n.d.-b). The government of Indonesia initiated the JKN (national health insurance scheme) to ensure UHC for all Indonesians, which is a subsided health service whereby Indonesians can access care by paying less or nothing at all. The Presidential Decree No. 82/2018 stated that the JKN does not apply in a natural disaster (RRI, 2018), which means affected people can get free services without paying monthly fees. In the case of Siosar, the relocation site was not considered as being in the disaster phase. Therefore, the government considered the area as 'normal' and consequently introduced 'normality', including JKN.

These findings were similar to results from previous studies conducted in post-disaster settings that showed affected people (still) could not afford to access MRH services because of lost financial means and livelihoods, and damaged transport and infrastructure as the result of disasters (Alam & Rahman, 2019; A. Myers et al., 2018). Women faced difficulties accessing MRH services in post-earthquake Nepal because of several barriers, including financial costs in accessing services, challenging road conditions and destruction of district hospitals (A. Myers et al., 2018). Furthermore, women faced challenges during post-Cyclone Alia in Bangladesh in 2009 because of lost livelihoods, cultural demands that required women to bear children and take care of families, long distances to reach clean water and sanitation facilities that affected their health status (Alam & Rahman, 2019). Considerable time is needed to restore affected people's capacity to return to normality following a disaster.

Exo-level: Design of the new place in Siosar

This section views the design of the relocation site in Siosar through the SEM exo-level (Bronfenbrenner, 2005), including evaluating the facilities and infrastructure provided that influenced people in meeting their MRH needs. The results showed that having a one-bedroom house created further social issues, including the inability to meet MRH needs. Furthermore, the study found the government's *Dana 1 Milliar untuk Desa* (One Billion Rupiah Fund for Villages) helped the development of the villages in Siosar, including supporting the provision of MRH services.

Women and community leaders faced difficulties in adjusting to living in one-bedroom houses. This case study found evidence of an inability to meet the MRH needs among couples, which resulted in reluctance to plan for pregnancy because of hesitation to have sexual intercourse given the privacy, safety and confidentiality issues when living in one-bedroom houses. Findings related to complaints of living in poorly designed houses in relocation sites were also reported in other studies. A study conducted in post-tsunami Aceh that aimed to understand common concept of post-disaster reconstruction (i.e. 'building back better'), especially in the context of post-disaster housing design, identified issues related to the design and materials used for the houses (Rahmayati, 2016). That study revealed housing recipients were unhappy with the new houses provided because they were not consistent with their traditional way of life. In addition, the location was far from their source of income, and materials used were not of an acceptable quality. People faced challenges with the smaller houses and public facilities that were not complete, as they did not have markets, a *Meunasah* (small prayer-house) or a public hall for people to gather. This suggests that the concept 'building back better' needs to be reframed to consider the communal needs and wants of post-disaster survivors and local cultures. Inappropriate relocation sites affect the health status of affected populations.

Women and community leader participants identified possibilities to use *Dana 1 Milliar untuk Desa* for post-disaster activities in the relocation sites. Women, community leaders and policymakers thought that this fund would help the development of the villages in Siosar including supporting the provision of MRH services. These findings were similar to those of other studies that analysed the possible better use of village funds to improve the level of readiness (Das & Luthfi, 2017; Fahlevi, Nur, Arifin, & Azril, 2019; Nur, Dirhamsyah, & Fahlevi, 2019). *Dana 1 Milliar untuk Desa* is part of Dana Desa (Village Fund), which was stipulated in the Government Regulation NO. 6/2014 and Regulation No. 22/2015, and amended by Government Regulation No. 8/2016 (Bappenas, 2017). This initiative aims to improve service delivery performance at the lowest administrative tier and reduce social inequality and poverty. The Fund is allocated by each province and district and transferred to each village within its territory. This was initiated after the decentralisation power in Indonesia. *Kementerian Desa, Pembangunan Desa Tertinggal, dan Transmigrasi* (Minister of Village, Disadvantaged Regions and Transmigration) of the Republic of Indonesia focuses on

development of rural areas, rural community empowerment, accelerating the development of disadvantaged areas and population transmigration (a scheme to ease overpopulation islands by moving people to the less populated areas/'periphery' of Indonesia) (Kemendesa, n/a). Finally, according to *Permendesa* (Ministry Regulation) No. 16/2018 concerning the Priority of the Use of Village Funds in 2019, the Village Budget can be used for DRR-related activities (Nur et al., 2019). Various sectors including education, health (and MRH), housing, peace and community social protection are included under the Village Fund (Das & Luthfi, 2017).

Despite the above policies, the overall health status (including MRH) in rural areas in Indonesia is still lagging. Disasters have been identified a contributing factor that affects efforts to improve the country's health status (Bappenas, 2017). Reducing vulnerability before a disaster is a way to improve community resilience (Alexander, 2002; Ismail-Zadeh, Cutter, Takeuchi, & Paton, 2017; Johansen, Horney, & Tien, 2016; Patel, Rogers, Amlôt, & Rubin, 2017). The resilience concept is strongly related to development. Furthermore, as the Village Fund comes under the Government of Indonesia's development agenda, the literature suggests that disaster management and DRR should be integrated into the Village Fund (Das & Luthfi, 2017). However, a study conducted in Aceh revealed that the Village Fund had only allocated less than 1% for DRR-related activities (Nur et al., 2019). This suggests that different decentralisation systems across regions in Indonesia, as well as lack understanding of the humanitarian-development nexus among stakeholders in Indonesia were identified as key barriers for integrating disaster management and DRR into the Village Fund.

Macro-level: Continue disaster management leadership

The DRM system in the post-disaster period following the Mount Sinabung eruption aligns with the SEM exo-level (Bronfenbrenner, 2005). This focuses on evaluating the systems that were put in place in Siosar, and leadership from the authority during rehabilitation and recovery phases. New social (non-physical) issues in the relocation site resulted from poorly designed facilities, lack of monitoring from the health authority and relevant stakeholders in the relocation site, as well as insufficient strategies related to management post-disaster. These factors impacted the MRH needs of people in Siosar.

Some participants described Siosar as ‘still not the ideal place for the relocation site’ because it directly faced Mount Sinabung. In addition, nostalgia for and memories of their previous villages meant participants was also ‘worried’ that another eruption of Mount Sinabung would reach Siosar. Furthermore, participants also noted the poor design of the relocation site with small houses that created privacy issues (e.g. hesitancy to engage in sexual intercourse and get pregnant), as well as concern about the future of children living in Siosar. Most women participants wanted the authorities to continue to manage Siosar and help people become more resilient. They described Siosar as a ‘*pekerjaan rumah yang harus diselesaikan’* (unfinished homework assignment) for the authorities, as there was remaining work to do during the relief and recovery phases. This finding concurred with other studies focused on meeting MRH needs during disasters (Chaudhary et al., 2017; Chynoweth, 2008; Onyango et al., 2013; Sajow et al., 2019), indicating a lack evidence related to meeting MRH needs during relief and recovery phases. A unique finding from the present study was the need to provide safe space for women after disasters.

These findings attest to the vital importance of ensuring the better provision of MRH in post-disaster settings not being the sole responsibility of health authorities. Women, community leaders, health personnel and policymakers stressed the importance of working together during disaster response to ensure the MRH needs of affected people were met. These findings were similar to other studies that revealed the importance of inter-sectoral coordination in meeting MRH needs in disaster and post-disaster settings (Chi, Bulage, et al., 2015b; Chynoweth, 2008). Provision of MRH services in disaster and post-disaster settings requires the collaboration of multiple sectors, and includes the restoration of livelihoods, education and other basic services (Chi, Bulage, et al., 2015b). The Inter-Agency Field Manual on Reproductive Health in Humanitarian Settings advocated for multi-sectoral coordination to provide comprehensive high-quality sexual and reproductive services during disaster and post-disaster settings (IAWG, 2018). Managing the post-disaster period is a complex task that needs strong multi-sectoral coordination and collaboration.

9.3.3. Future DRM model for comprehensive integration of MRH

This section explores views from women, community leaders, health personnel and policymakers regarding a future DRM model, with a primary aim to better integrate MRH. As presented in Chapter Eight, the findings related to the perspectives of the future DRM in Indonesia will be examined. This study revealed perceptions regarding a future DRM model that would include education for pregnant women, their husbands and the entire community on disaster management, enhancement of health sectors to ensure the provision of MRH during disasters and improvement of multi-sectoral coordination before a disaster to prepare for a better response.

Micro-level: Education on disaster management for pregnant women, husbands and communities who live in disaster-prone areas

The micro-level of the SEM (Bronfenbrenner, 2005) examines findings related to individuals' readiness for disaster. This study revealed that at the individual level, educating pregnant women, their husbands and communities on disaster management would help to enhance their level of readiness to respond to a disaster.

Women, community leaders, health personnel and policymakers wanted DRM messages to be integrated into MRH services as part of preparedness measures to help build community resilience in disasters. The findings of this study correspond with other studies that revealed the importance of investing in building women's resilience before a disaster through the integration of DRR into MRH services (Aitsi-Selmi & Murray, 2015; Hamidazada et al., 2019; Hirani & Richter, 2019; Pascapurnama et al., 2018). Involving husbands and other community members during disaster management training would ensure better protection for women and pregnant women during disasters (Hamidazada et al., 2019). Previous studies present clear evidence regarding the importance of educating pregnant women, their husbands and communities who live in disaster-prone areas on disaster management using information, education and communication materials such as posters, flyers, and short movies as part of antenatal care and MRH services.

This study revealed perceptions of the importance of educating women to empower them. As introduced in the prologue of chapter Six, *Beru Dayang* symbolises the spirit and is

associated with rice and fertility for people of Karo. In the context of Karonese culture, which was the site of this case study, educating communities on the importance of protecting and respecting women and pregnant women is crucial as they represent fertility and health (Van der Goes, 1997). A gender analysis study conducted in Karo, revealed that for Karo people, women were associated as 'food producers', as they plant, grow, harvest and prepare food for families (Daulay, Meliala, & Humaizi, 2019). Therefore, educating the community on protecting women during a disaster was considered important. Community leader participants expressed the need to educate communities on the importance of protecting and respecting women. In Indonesia, several studies revealed the need to educate women, their husbands and communities in rural areas on disaster management. Studies conducted on Java island in Indonesia revealed lack of knowledge on disaster safety among community members (particularly among women) who lived in areas around the slopes of or near active volcanoes (Lavigne et al., 2008) Few, Scott, Wooster, Avila, & Tarazona, 2016). Therefore, the lack of knowledge related to DRM among Indonesian women in rural areas resulted in higher casualties among women during the 2004 tsunami and earthquake (Mulyasari & Shaw, 2013). The importance of localising DRR by using local content is a powerful strategy for community education on disaster management, particularly targeting women and other vulnerable groups (Few, Scott, Wooster, Avila, & Tarazona, 2016). It is argued that women can play a leadership role in building disaster resilience, even in rural areas (Sim, Lau, Cui, & Wei, 2019). Therefore, integrating disaster management issues into MRH services is important. To better educate women on disaster management, there is a need to integrate DRR in health education and promotion as visual media, printed media and drills (Pascapurnama et al., 2018). Empowering women is another way to protect, respect and make women ready even when a disaster occurs.

Meso-level: Improvement of health system readiness to meet MRH needs during a disaster

The meso-level of the SEM (Bronfenbrenner, 2005) critiques findings related to having a better MRH system during disasters. This study revealed the importance of equipping health service providers with the knowledge and skills necessary for working during disasters, stockpiling commodities and simplifying MRH protocols to suit the disaster context.

This study found that poor knowledge and low levels of readiness among health providers were seen to impact the MRH outcomes of the community. Women and community leaders

felt that in the future, health providers should be better equipped with skills and knowledge on how to provide MRH services during a disaster. They believed that if health providers who responded during a disaster were more skilled, they would receive more respect from their communities. These low levels of knowledge and readiness among health personnel concur with other studies that revealed the need to make health service providers ready and able to continue to provide MRH services during crises (Casey et al., 2015; WRC, 2011, 2013). In Indonesia, during the 2006 earthquake in Bantul of Jogyakarta, health service providers left the affected areas because of lack confidence, limited supplies and facilities and the inability to provide health services during the emergency response (Widayatun & Fatoni, 2016). At the global level, the MISP recommends training for health personnel as a key activity to enable the provision of comprehensive MRH services (WRC, 2011). Educating midwives on MRH and disaster is important because of the crucial role they play in preparing for and meeting MRH service needs in humanitarian settings given their position as frontline providers and social and geographical proximity to their communities (Beek et al., 2019). Furthermore, training on disaster management targeting female health service providers (including midwives) ensures women have access to MRH services during disasters (Beek, Mcfadden, & Dawson, 2018; Hamidazada et al., 2019; Sangkala & Gerdtz, 2018; WRC, 2011). A study conducted in Afghanistan (Hamidazada et al., 2019) revealed that the insufficient number of female health personnel trained on DRR and DRM meant that coverage for women during awareness sessions on health and DRR were low.

A key challenge was an insufficient supply of MRH-related medicines that hampered the provision of MRH services during disaster response. Therefore, participants hoped to have adequate medical and non-medical supplies that would be made available during a disaster response. Most participating community leaders noted the importance of stockpiling commodities before a disaster. This finding was similar to previous studies that emphasised the importance of stockpiling initiatives to ensure the continuation of MRH services, even during disasters (Casey et al., 2015; Chaudhary et al., 2017; R. Das, 2018; WHO, 2018b). Ensuring the availability of commodity management and security leads to readiness and an increased capacity of countries to ensure lifesaving MRH services during disasters (Casey et al., 2015). Another study conducted in relief camps in Pakistan revealed that the unavailability of a Clean Delivery Kit, as a requirement for life-saving MRH according to MISP (WRC, 2011)

that had a sterilised blade to cut the umbilical cord of a newborn baby contributed to a higher incidence of infections and maternal and neonatal deaths (Maheen & Hoban, 2017). Therefore, having sound health infrastructure with commodity management and a security system that enables stockpiling of basic MRH medicines and supplies (e.g. emergency reproductive health kits) prevents maternal and newborn deaths and illness (Chaudhary et al., 2017). Furthermore, in addition to medical supplies, the availability of basic items including reusable sanitary napkins, clothes and blankets, would ensure that women's physical, psychosocial, sexual and reproductive health needs were met during disasters (Thapa & Acharya, 2017). Commodity management and security involve readiness of infrastructure, logistics and warehousing facilities.

Findings related to the need to equip health providers with disaster management knowledge and stockpiling commodities reflect enhancing the capacity of health providers to 'continue the business' of providing MRH services during a disaster and in post-disaster settings. This study revealed linkages between DRM and business continuity management (BCM) that focuses on risk management (Elliott, Swartz, & Herbane, 2010; Medina, 2016). Although a number of studies have been conducted in the area of BCM and DRM (Cerullo & Cerullo, 2004; Ferguson, 2018; Sahebjamnia et al., 2015), the accessibility and acceptability of BCM and MRH in emergency settings is under-researched. In the context of this study, BCM is needed to ensure the health sector has adequate capacity to deliver MRH services during a future disaster. Otherwise, efforts to develop a preparedness plan would remain 'inside a drawer', and the implementation would not be maximal.

This study highlighted the importance of the simplification and adaptation of MRH guidelines for disaster settings to ensure the continuation of services and provide life-saving interventions. Health service providers need to have simple protocols to guide the provision of MRH services during disasters. The implementation of such initiatives is consistent with the SDGs, which aim to ensure universal access to sexual and reproductive health in both normal and disaster contexts through the integration of reproductive health into national strategies and programmes (UN, n.d.-b). Furthermore, the simplification and adaptation of MRH guidelines into disaster settings also corresponds with another SDGs target, which is to strengthen readiness and capacity of countries for risk reduction and management (UN, n.d.-b; WHO, 2012b). The global guidelines on reproductive health in humanitarian settings

specified in the Inter-agency Field Manual are intended to guide the provision of sexual and reproductive health during disaster responses, and expected to be adapted to suit local contexts (Beek et al., 2018; IAWG, 2018; Tran, Dawson, Meyers, Krause, Hickling, & Group, 2015). Adaptation of MRH guidelines must emphasise considering the local context, be field-oriented and focus on immediate life-saving for affected people.

Exo-level: Increase readiness through preparation for an enabling environment during displacement

The exo-level of the SEM (Bronfenbrenner, 2005) critiques findings related to creating a better MRH system during disasters. This study revealed that the future DRM model should consider the surrounding environment, including well-designed temporary shelters and relocation places. Having well-designed temporary shelters and houses that offer protection, safety and security would enable the appropriate provision of MRH services to affected people.

The study supports arguments that a well-designed shelter should consider non-physical aspects to provide a conducive environment that enables people to meet their MRH needs. Policymakers recommended that in future disaster responses, the government should look to provide responses to the whole community and not specifically target a particular group. They described the 'whole community' as a 'family-centred' approach whereby '*the family should be together. With this concept, the husband, wife, and their children are together*…' (PM, M, J, 2). Losing a house due to a disaster represents the loss of dignity, privacy and identity. Therefore, providing houses in a post-disaster setting means ensuring well-being, comfort, security, privacy and protection (Félix, Monteiro, Branco, Bologna, & Feio, 2015). During the post-disaster period, four different types of housing were available: 1) emergency shelter or a place where survivors stay for a short period of time during the height of the emergency (e.g. the house of a friend or a public shelter); 2) temporary shelter, which is used for an expected short stay, ideally no more than a few weeks after the disaster (e.g. a tent, a public mass shelter); 3) temporary housing, or a place where survivors can reside temporarily, usually planned for 6 months to 3 years, before returning to their normal daily activities (e.g. a pre-fabricated house, rented house); and 4) permanent housing or return to a rebuilt house/re-settlement in a new house to live permanently (Félix et al., 2015, p. 45; Quarantelli, 1995). Shelter and settlements are inter-related and need to be considered as a

whole (Sphere, 2018). The design of houses in relocation sites should consider infrastructure and non-infrastructure elements, because they influence the physical, social and psychological health and protection of those occupying the houses (Leon, Kelman, Kennedy, & Ashmore, 2009). To ensure the well-being, comfort, security, privacy and protection of families, a 'people focus' is critical, whereby the design focuses on creating 'homes' that could accommodate all members of the family rather than designing a 'shelter as building' (Félix et al., 2013; Félix et al., 2015). These concerns are consistent with broader human rights principles (Foster et al., 2017) and the direction of the provision of MRH in humanitarian settings that aims to ensure access to MRH services for all affected populations.

Macro-level: Enhance the readiness of stakeholders to meet MRH needs

The macro-level of the SEM (Bronfenbrenner, 2005) analyses findings related to overall leadership, coordination, systems and policies when managing a future disaster. The findings indicated that future DRM models must demonstrate strong linkages between development initiatives and the DRM agenda by placing more emphasis on preparedness measures, including the creation of preparedness and contingency plans and budget allocations to implement these plans. The findings also emphasised the importance of coordination and counting on the role of religious leaders during disaster preparedness. Finally, the findings highlighted the importance of building the capacity of local-level authorities on disaster management and decentralisation in Indonesia.

The study revealed the need to have a clear connection between humanitarian and development agenda by equally prioritising activities related to preparedness and response. Women, community leaders, health personnel, and policymakers stated the importance of having a disaster preparedness plan to ensure a better response to a future disaster in the DRM model. Having a community preparedness plan is an effective metric for evaluating and improving a community's resilience (Johansen et al., 2016; WHO, 2019a). According to the WHO's 2019 Health Emergency and Disaster Risk Management Framework, there is a need to change the approach from 'planning FOR communities' to 'planning WITH communities' to reduce vulnerability levels (WHO, 2019a, p. 5). The present findings showed that communities wanted preparedness planning that was developed by them, based on their culture and context and suited to their capacity and level of resilience. As stated in Chapter Three, disaster risks and impacts are closely tied to development processes and initiatives. Therefore,

development affects the vulnerability and resilience of a community (Thomalla et al., 2018). In the absence of a clear strategy, disasters are a key factor holding back progress towards the global development agenda (Cannon, 2007; UNISDR, 2005, 2015). Prioritising MRH issues and needs in contingency and disaster preparedness plans would ensure effective MRH services during disasters (Chaudhary et al., 2017). Having a preparedness plan that incorporates MRH services would contribute to efforts to reduce the MMR.

The findings showed that the future DRM model should include commitment to financial support to ensure the provision of MRH services during disasters. Policymakers realised the limitations in term of budget allocation to meet MRH needs during disasters, and proposed the inclusion of MRH into preparedness activities rather than merely relying on responding when a disaster occurs. These findings were similar to other studies that highlighted the gaps in support for the provision of MRH services in humanitarian settings (Casey et al., 2015; Chynoweth, 2015; Tanabe et al., 2016). Although there has been a significant increase of commitment to support MRH issues on the humanitarian agenda, funding allocated to support the provision of MRH services in humanitarian settings is considered low (Casey et al., 2015). During the 2010 Mount Merapi eruption in Indonesia it was revealed that the main focus after the disaster was on shelter and food. Therefore, many pregnant women delivered their babies in temporary shelters without proper help from skilled birth attendants. Moreover, during the 2006 earthquake in Jogyakarta, there was a lack of preparedness; in particular, the government's limited budget for maintenance of early warning equipment resulted in a higher level of casualties when a disaster occurred (Kusumasari & Alam, 2012). This study revealed that lack commitment and insufficient budgets to support disaster response affected efforts to meet the MRH needs of the affected populations.

Furthermore, enhancing collaboration at the local level requires the coordination and involvement of religious leaders. Women and community leader participants argued that religious leaders play important roles within their community. Ensuring the provision of MRH services during a disaster should involve religious leaders in preparedness activities, such as adding spiritual and faith-based services in disaster preparedness and response. These findings concurred with other studies that stated the importance of engaging religious leaders in the humanitarian agenda (Ager, Fiddian-Qasmiyeh, & Ager, 2015; Joakim & White, 2015; Saja, Teo, Goonetilleke, & Ziyath, 2018). Religious beliefs and local culture are considered

important elements that construct social beliefs, culture and faith (Saja et al., 2018). Furthermore, these social beliefs and culture along with social capital, social mechanism/competence, social equity and diversity and social structure, are called the 'five-S' model and are recognised as important tools for measuring social resilience in a disaster (Saja et al., 2018). In the post-earthquake period in Jogyakarta in 2006, faith and religious responses played an important role in providing spiritual and psychological strength and allowing the affected population (including pregnant women) to rebuild their resilience (Joakim & White, 2015). Furthermore, faith-based health service providers contribute critical services related to maternal and newborn health, as some issues related to sexual health, family planning, abortion, STIs and HIV/AIDS may be better sensitised to the community using the corridor of religious leaders (Karam & Marshall, 2016). People respect and listen more to such leaders, as they are seen as better able to convey sensitive issues to communities (Ataullahjan, Mumtaz, & Vallianatos, 2019; Karam & Marshall, 2016). These studies showed that in a country such as Indonesia, religious leaders could play important roles, including sensitising MRH-related issues to communities during preparedness, disaster response and post-disaster.

The study revealed that in a future DRM model, the Indonesian government should focus on building the capacity of local authorities in managing disaster risks. Policymakers argued that, given the size of the country, fully relying on the central government to provide responses seems impossible. Several studies highlighted the importance of building local capacity to build resilience, sustainability and effective disaster actions (Alcayna, Bollettino, Dy, & Vinck, 2016; Allen, 2006; Leon et al., 2009). Limited local capacity to address and manage disasters was also revealed in other studies (Alcayna et al., 2016; Yumarni & Amaratunga, 2015). In the context of a country such as Indonesia, building the DRM and leadership capacity of local authorities, including incorporating local knowledge, is arguably an effective way to reduce vulnerability and enhance the ability to manage disasters and climate change adaptation (Yoseph-Paulus & Hindmarsh, 2018). During the 2006 earthquake in Bantul of Jogyakarta, the capacity and capabilities of local-level authorities in managing natural disasters were weak and resulted in slow responses and lack coordination at the onset of the disaster (Yumarni & Amaratunga, 2015). Therefore, improving the capacity and readiness of local authorities in

responding to a disaster would help reduce vulnerability and unwanted consequences during disasters.

Finally, addressing the capacity of local authorities corresponds with the current political structure in Indonesia that uses a decentralisation approach. Decentralisation in Indonesia resulted in transferring authority and responsibility from the national to local levels, including each district having its own health system (Das & Luthfi, 2017) and new paradigms for service delivery. Decentralisation affected the country's progress towards UHC (Pisani et al., 2017), but in the field of DRM, creates opportunity for local-level authorities to manage disaster risks.

9.4. SUMMARY

The main findings of this study were summarised and critically compared and contrasted with local, regional and international literature, based on the objectives of the research. The SEM and diagnostic event approach were used to structure the layering factors that contribute to the integration of DRM in the past, present and future that influence the provision of MRH services in emergencies.

This study highlights the importance of protecting pregnant women during a disaster as their level of vulnerability escalates given the nature of the disaster, disruption of access to and quality of MRH services and the changing environment. The study shows that during the 2013 emergency response, although there were efforts to integrate the provision of MRH services into DRM, services were considered inadequate because of limited facilities and lack of supplies, low competency of health personnel and conditions in the temporary shelter that influenced how the affected people accessed MRH services. There is a need for consultation with local people when designing temporary shelters so that affected people can maximally use the facilities provided. Furthermore, although there were efforts to integrate the provision of MRH services into recovery and rehabilitation periods, the services were considered inadequate because of limited facilities and supplies. The environment in the relocation site was also seen to hamper the efforts of affected people in meeting their MRH needs. Finally, this study highlights the importance of community awareness and education

on disaster management, enhancement of health sectors to ensure the provision of MRH during disasters and improvement of multi-sectoral coordination before a disaster to prepare for a better response.

The next chapter presents the strengths and limitations of this study, and provides key recommendations and suggestions for future research, as well as the conclusion.

Chapter Ten: CONCLUSION

Study the past if you would define the future.
– Confucius

10.1. INTRODUCTION

This chapter concludes this thesis. The chapter commences with the strengths and limitations of this study, and then sets out key recommendations for policy, education, practice and future research. Finally, the chapter presents the conclusions of the study.

10.2. STRENGTHS AND LIMITATIONS OF THIS STUDY

This study examined the integration of MRH into DRM in Indonesia using the case of the Mount Sinabung eruption in 2013. The application of the case study as the main methodology underscored by the SEM as the framework contributed to the strengths and uniqueness of this study. A number of limitations were also recognised while executing this case study. These limitations were related to the scope of the study, boundaries and participants.

A. Strengths

This study had three main strengths: providing an in-depth understanding regarding process integration of MRH into DRM using experiences and perspectives from different voices and associated data triangulation; explaining factors that contributed to the provision of MRH services during a disaster setting in Indonesia; and providing understanding of the integration of MRH into DRM in chronological way by demonstrating the relationships between the event and the process.

First, the research provides in-depth understanding regarding the process of integrating MRH into DRM using experiences and perspectives from women who were pregnant

during the disaster, community leaders, health personnel and policymakers. This was achieved through the application of case study approach using Yin's model, with associated characteristics including: the 'units of analysis' by combining views from different participants groups, the 'boundaries' of single case study of the 2013 eruption of Mount Sinabung and 'triangulation' of findings from different sources that enabled an in-depth understanding of the phenomenon. By drawing on the voices and perspectives of women, community leaders, health personnel and policymakers, a deeper understanding of the phenomenon was forged. For example, the convergent perspectives that emerged from the interviews with women, community leaders and health personnel showed a clear linkage between DRM and BCM. Application of the case study approach enabled an understanding of the current capacity of the health sector in providing MRH during disasters. Therefore, based on the present findings, there is a need for future research in the area of MRH, DRM and BCM, particularly examining the health sector capacity to implement disaster preparedness and response planning where MRH has been integrated.

Second, it explains the factors that contributed to the provision of MRH services during a disaster setting in Indonesia. The research provides links to the provision of MRH services and determinants that influence the accessibility and availability of the services during the disaster context. This was achieved through the application of the SEM that allowed a deeper understanding of individual experiences and perspectives at the micro-level, provision of MRH services at the meso-level, the surrounding environment (including temporary shelters and relocation site) at the exo-level and the country's policies and strategies at the macro-level. This provides a sound understanding of the level of readiness of the authorities to respond to MRH needs during disaster and post-disaster, including the ability to gain in-depth knowledge of the level of cooperation, coordination and collaboration among stakeholders during and after a disaster in Indonesia.

Third, the findings provide an understanding of the integration of MRH into DRM in a chronological way by demonstrating the relationships between event and process through the application of the diagnostic event approach. The diagnostic event was able to 'diagnose' the processes of integration by looking at events that occurred before after the 2013 eruption. For example, how the 2010 eruption influenced people's experiences

and the government's capacity in responding the 2013 eruption. The process continued with moving the affected population to the new site. It was 'diagnosed' that the new site in Siosar had room for improvement, including the infrastructure such as clinics, houses and land that were given to the affected people, as well as the overall systems (including the health system).

This case study revealed that experiencing previous eruptions had increased participants' awareness regarding the nature of the eruption, particularly the direction of the travel of the volcanic ash. Having previously experienced a series of disasters, women and community leaders realised that they lived in disaster-prone areas. Learning from previous disasters had increased the level of resilience within communities and shaped local knowledge, as this was 'diagnosed' as part of a localised approach for DRR. The recurrent eruptions (events) were 'diagnosed' as a contributing factor that facilitated the integration process. As mentioned by Keast, Brown and Mandell (2007), integration has three stages: cooperation, coordination and collaboration. Findings from this case study reveal how the authorities in Indonesia came up with initiative to activate the local disaster management body that resulted in better cooperation and coordination among different sectors. In contrast, it was also 'diagnosed' that during the 2013 eruption response, collaboration among different stakeholders was considered insufficient. The design of temporary shelters did not involve perspectives from different sectors including health and protection agencies. This resulted in women and community participants feeling insecure when using public facilities as well as inability to rest properly while staying in the temporary shelters.

Finally, the diagnostic event helped understand the phenomenon of the integration of MRH into DRM by looking at socio-cultural aspects (Simons, 2009). It was found that the recurrent eruptions had increased the level of readiness among people who lived around Mount Sinabung, as well as how they interpreted the eruptions in different ways and tried to link the natural phenomenon and their beliefs.

B. Limitations

There were three identified limitations of this research: the scope of the research that focused on MRH; boundaries (particularly key populations) of the case study that only involved those who opted for relocation in Siosar; and the women participants did not

involve those who had experienced complications, miscarriages and abortions during the eruptions.

Scope of the research

This case study focused on solely on MRH services in one bounded location, and the unit of analysis was limited to services received solely by pregnant women by the 2013 eruption. Therefore, this study focused on experiences related to antenatal, delivery and postnatal care provided during and after the disaster.

Although the Indonesian National Technical Guidelines for Health Crisis Response on Disaster (Indonesia MoH, 2007) has adopted the global MISP for reproductive health in crises (translated as *Paket Pelayanan Awal Minimum untuk Kesehatan Reproduksi*) in Bahasa Indonesia language, that includes prevention of STIs/HIV, management of sexual violence and maternal newborn care, this study specifically focused on maternal health for reasons of timeliness, access and budget constraints. By not including these participants, there was a possibility of not gaining a comprehensive in-depth understanding of general reproductive health situation during disaster response in Indonesia, as it only focused on maternal aspects of the reproductive health issues.

Boundaries/key population of the case study

This study did not cover experiences and perceptions from affected populations who opted for *relokasi mandiri* (independent relocation), namely from four other affected villages nearby: *Berastepu, Sukanalu, Sigarang-garang* and *Kuta Gunung.* Neither the *Dinas Sosial Kabupaten* (district office of social service) nor the office of *Badan Penanggulangan Bencana Daerah* (district office of disaster management authority) had data related to the current addresses of these people. By excluding this population, this study did not capture nuances of experiences and perceptions from *relokasi mandiri,* particularly related to accessing MRH services. There is a possibility that these affected populations faced certain challenges in settling in a new place or city and fitting themselves into new communities and commencing new livelihoods.

Participants

This limitation reflected participant sampling in terms of not being able to recruit women who had experienced miscarriages and abortions during the 2013 event because

of unavailability of reliable data (i.e. health information system) to show and verify pregnant women who had experienced complications, miscarriages and abortions during the 2013 eruption. It is possible that these women may have different perceptions of accessing MRH services and provide different experiences regarding complications, miscarriages and abortions.

10.3. KEY RECOMMENDATIONS FOR POLICY AND PRACTICE

This case study identified specific areas for improvement for the better integration of MRH into DRM. These include the need to improve the interventions at the individual and community level, health sector and service level, as well as policy level. At the individual and community level, the need to provide timely and targeted education to communities, including pregnant women and their spouses, on disaster risks as well as how to access MRH services. At the health sector and service level, the needs included equipping health service providers with disaster management knowledge, MRH-related medicines and equipment commodities and adapting and simplifying MRH guidelines to better suit disaster settings. Finally, at the policy level, there was a need to improve multi-sectoral coordination and integrate MRH and DRM issues into the development plan. The identified recommendations are presented below.

Individual and community level

Key Findings	Reasoning	Recommendations
To educate and sensitise pregnant women, their spouses and wider communities on disaster management.	These pregnant women, their spouses and wider communities were aware of the consequences that could happen when a disaster struck and felt that they had appropriate knowledge on how to mitigate risks at the community level. It is important to ensure the local community is educated to build their resilience and mechanisms to protect themselves, including pregnant women and other vulnerable groups during and after disasters.	To equip pregnant women, their spouses and wider communities with an awareness of disaster management, the following steps are to be considered. 1. Include disaster management-related messages in health awareness tools (i.e. posters, flyers, radio, short video) 2. Conduct awareness sessions on disaster management issues during provision of antenatal care and other MRH services at *Pos Pelayanan Terpadu Ibu-Anak Posyandu* (integrated maternal-child post at community), *Puskesmas*, and the higher level of health facilities. As indicated in Chapter Two, *Pos Pelayanan Terpadu Ibu-Anak Posyandu* (integrated maternal-child post at community) and *Puskesmas* are primary healthcare facilities that are located at the grassroots level. 3. *Adopt Suami Antar Jaga – Suami Siaga* programme into disaster context to reduce the vulnerability of pregnant women ensuring safe deliveries during disasters. This programme is a Ministry of Health initiative that aims to reduce the MMR in Indonesia by increasing husbands' readiness to bring their pregnant wives to a health facility and stay there during and after the delivery.

Health service providers level

Key Findings	Reasoning	Recommendations
To build health service providers readiness to provide MRH services during disaster settings.	For the health sector to equip its health service providers with skills and knowledge on disaster management. This is important to ensure health service providers, including midwives as part of category one responders, are ready to provide MRH services during emergency settings. Currently, the midwifery, nursing, medicine and public health curricula in Indonesia do not have any syllabi related to disaster management. The case study finding suggests for initiating training on MISP to health service providers and inserting MISP into midwifery and nursing curricula. This recommendation corresponds to Policy of Integration of sexual and reproductive health into health action and DRM (WHO, 2012), as there is a need to be more concrete great need to make health service providers ready and able to continue to provide MRH services during times of crises.	To equip health service providers with skills and knowledge on disaster management, the following steps are to be considered. 1. Map capacity of existing health service providers, finding out who has received disaster management and MISP training. 2. Create a pool of disaster management and PPAM trainers at national and sub-national levels. The trainers will roll out training across the country on disaster management and PPAM. 3. Review the current midwifery, nursing, medicine and public health curricula and initiate inclusion of disaster management and PPAM. This would be done in close collaboration between the Ministry of Health, Ministry of Education and the National Disaster Management Authority.

To stockpile MRH commodities and ensure that MRH guidelines suit disaster settings.	For the health sector to stockpile MRH commodities and have MRH guidelines that are ready to be used during disaster settings. This is paramount to ensure the availability of health supplies to continue the provision of MRH services even during a disaster. This recommendation is consistent with SDG Three related to health and well-being that aims to ensure universal access to sexual and reproductive health in both normal and disaster contexts through the integration of reproductive health into national strategies and programmes (UN, n.d.). The stockpiling is an important factor to ensure the continuation of MRH services even during disasters.	The following steps are to be adopted. 1. Map supply chain including MRH commodities and logistics capacities at national and sub-national levels. This should be done by integrating MRH-related supplies stockpiling into the existing country's health commodity and security system. 2. Work with other sub-sectors under health and with other sectors to ensure availability of warehouses, transport, communications, and relevant infrastructure during disaster and post-disaster responses. 3. Establish regional level warehousing for MRH commodities, given Indonesia is geographically a wide nation with challenging infrastructure. The regional level is where numbers of provinces are clustered to better manage the responses. 4. Ensure funding commitment from the government at the national and sub-national level to support stockpiling initiatives; there is a policy at the country level regarding budget allocation to support the provision of health services at both central and sub-national levels. Budget allocation related to stockpiling commodities should be integrated into this budget planning.

Policy level

Key Findings	Reasoning	Recommendations
To link humanitarian and development agendas.	For policymakers to capture MRH and DRM issues in various development plans, policies and strategies. This is paramount to ensure better preparedness and increase the level of readiness to respond to a disaster in the future. The case study finding suggests the government review the existing development initiatives (e.g. the Village Fund programme), and try to include preparedness plans that incorporated MRH issues. Linking humanitarian-development nexus is consistent with the current global initiative.	To integrate MRH and DRM into development initiatives, the following steps are to be considered. 1. Map existing development plans and identify the level of preparedness activities. 2. Ensure key MRH activities during disasters are well captured in those plans. 3. Share those plans with authorities at central, provincial and district levels to test and validate whether they are workable and culturally appropriate. 4. Monitor and evaluate the execution of those plans and improve/revise if necessary. 5. Establish a clear link and create room for information sharing between policymakers, practitioners and academics. Information and statistics gathered by sectors should be shared with the academic for further studies. Vice versa, results from various research produce by university and academics to be shared with and informed policymakers.
To improve multi-sectoral coordination and collaboration for better integration.	For policymakers to improve coordination and collaboration among different sectors to ensure that when a disaster occurs, the MRH needs of pregnant women and other affected people are met. The case study finding suggests the	To improve multi-sectoral coordination and collaboration for better integration of MRH into DRM, the following steps are recommended. 1. Health sector to continue to prioritise MRH in emergencies into its plans and interventions.

	current government initiate the discussion urgently needs to address the provision of MRH services in emergency settings before a disaster occurs and not on the *ad hoc* basis in the onset of a disaster. This recommendation is consistent with the global frameworks and agendas including the SDGs, particularly targets related to achieving universal access to sexual and reproductive health and rights, improving maternal health, and building capacity and resilience of country's early warning, preparedness and DRM (UN, n.d.-b; WHO, 2019a).	2. Health sector to increase their presence in multi-sectoral coordination by sharing health plans and interventions with other sectors. 3. Health sector to review other related sectors' plans and make sure health and MRH in emergency issues are captured in relevant documents such as contingency and preparedness plans. This includes reviewing plans related to camp management and shelter response, to ensure a conducive and appropriate health post and shelter designs during disaster and post-disaster settings. 4. Health sector to initiate and be part of simulation exercise organised by other sectors. For example, the health sector to be part of regular table-top exercises, drills and field test exercises conducted by the disaster management authority. 5. Health sector to improve its coordination mechanism with disaster management authority at the national and sub-national levels.

10.4. RECOMMENDATIONS FOR FUTURE RESEARCH

This study focused on understanding the process of integration of MRH into DRM in Indonesia. It would be useful for future research to further explore the process of integration of MRH into DRM in other disaster-prone countries. Similar to Indonesia, other countries such as those around the ASEAN and Pacific region are also making efforts to improve their DRM by creating policies and strategies, as well as recognising the importance of meeting MRH needs during disasters. By doing this, there will be country-, population- and culturally-specific evidence related to the level of readiness to respond and meet MRH needs during disasters across the region.

Further research is needed that focuses on understanding the level of vulnerability, potential hazards, and risks perspectives from health and DRM sectors. This would provide more evidence to be used by academics for the education of health professionals and by current practitioners (including policymakers) to strengthen capacity through having effective risk management.

Another emerging area for future research is assessing the level of resilience among communities who live in the Pacific Ring of Fire region; as these countries have experienced various disasters, there will be different resilience factors and local wisdom that could be studied and shared with other countries. Furthermore, future research is recommended in the areas of climate change and planetary health, particularly to examine how they affect MRH needs of other vulnerable groups including children, people with disabilities, refugees, minority populations and older people.

Lastly, based on this research, the future application of the case study and a diagnostic event approach could be considered as methodological approaches while undertaking research related to MRH and DRM. Case study and diagnostic event approaches suit these fields because disaster risks can be assessed by looking at dimensions of time, place and events. Therefore, findings could be arranged in chronological order and analysed to understand the level of vulnerabilities and resilience.

10.5. CONCLUDING REMARKS

This analysis found that there is a need to continue the integration of MRH into DRM in Indonesia. The experiences and perspectives shared by women, community leaders, health providers and policymakers revealed the nature and extent of the ongoing efforts to integrate MRH into DRM in Indonesia. However, considerable effort is needed to ensure that the provision of MRH services is not only during the initial stage of emergency response, but continued across the disaster cycle. This is important as DRM cuts across emergency responses, relief, recovery, mitigation and preparedness stages.

This study revealed the disaster under this case study escalated MRH needs, including a rise in the vulnerability of pregnant women and other affected community members. Clearly, the scale of a disaster influenced the level of destruction and the impact on human and environmental health. This study reveals that in a disaster-prone country such as Indonesia where disasters are part of daily life, people (particularly those who live in rural areas) associate disaster causations (and to some extent response) with local beliefs and customs. This finding also contends that experiencing a series of disasters builds a community's perceptions of resilience to handle such disasters.

This study highlighted the different prioritisation of responses before, during and after a disaster. There is considerable room for improvement in efforts from the Government of Indonesia, in particular, to pay more attention to planning for post-disaster interventions and link these interventions with development plans through vehicles such as the current DRM platform. Within the MRH sector, there is also a need to continuously integrate disaster and post-disaster MRH interventions into the broad concept of health system strengthening. Finally, the health emergency and DRM plan must align with the overall humanitarian and development nexus.

Finally, this study identified insights for a future DRM model that better integrates MRH services into emergency response, relief, recovery, mitigation and preparedness stages. The DRM model should include interventions related to education and awareness for

pregnant women, their husbands and communities. Furthermore, to better prepare for a disaster, there is a need to link DRM and BCM by equipping health personnel with disaster management knowledge, stockpiling commodities and simplification and adaptation of MRH protocols to suit the disaster and post-disaster context. Therefore, cooperation, coordination and collaboration between health and other stakeholders is essential to provide better MRH services during disaster and post-disaster responses.

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Appendices

Stage 1: Design

Appendix A: Literature Review – Database

Author	Year	Publisher and Link	Titled	Key words / Area*	Purpose	Methodology	Key Findings	Key Recommendations
Seims, S., Khadduri, R.	2012	Reproductive Health Matters; 177-187 www.rhm-elsevier.com DOI: 10.1016/S0968-8080(12)40679-6	Measuring Improvements in Sexual and Reproductive Health and Rights in Sub-Saharan Africa	RH, Performance, GBV, Maternal and Child Health, STI, HIV,	To review progress of implementation of SRHR strategies in sub-Saharan Africa by using performance metrics	Qualitative interview --> Open-ended interviews	- Most of country respondents do not have M&E in place to monitor/track SRHR; - Performance metrics is too narrow. It does not give a broader perspective about SRHR situation; - Suggestion on new indicators to measure SRHR	- To measure the progress of SRHR by using the proposed indicators
Djafri, D., Chongsuvivatwong, V., Geater, A.	2015	Asia-Pacific Journal of Public Health; 2015, Vol 27(2) aph.sage.com	Effect of Sumatra 2009 Earthquake on Reproductive Health Services and MDG 5 in the City of Padang, Indonesia	Earthquake, Disaster, Reproductive Health, Indonesia	To evaluate how the earthquake affects availability and accessibility of reproductive health (RH) services; impacts for the City of Padang in achieving its target for the fifth MDG.	- Secondary data review; - Qualitative interview through questionnaires;	- The disaster has caused disruption of RH services; - Shortage of water and other basic needs affected the RH services and coverage; - To date, statistical improvements related to mortality, maternal death, live birth, ante-natal care visits, post-natal care visits immunisation coverage and number of health personnel but decline in indicators related to contraceptive acceptors coverages	- Further enhancement of preparedness and response; - Involvement of local authorities in disaster mitigation;
Westhoff, W., Lopez, G., Zapata, L., Corvin, J.W., Allen, P., McDermott, R.	2015	American Journal of Health Education; 95-103 http://www.tandfonline.com/loi/ujhe20 DOI: 10.1080/19325037.2008.10599021	Reproductive Health Education and Services Needs of Internally Displaced Persons and Refugees Following Disaster	Reproductive Health, Services,	To study the needs of IDPs and refugees on SRH education and services post-emergency phase	- Qualitative; semi-structured interview;	- The study shows misperception among IDPs and refugees about the transmission of HIV and interaction with persons living with HIV/AIDS. - Respondents do not familiar and well educated on family planning methods	- further integration of RH services and education into post-emergency phase; - Continuous RH education to IDPs and refugees; - To equip local women on basic live saving reproductive health services and education;
Titaley, C. R., Hunter, C. L., Dibley, M. J., & Heywood, P	2010	BMC Pregnancy And Childbirth, 10(1), 43.	Why do some women still prefer traditional birth attendants and home delivery?: a qualitative study on delivery care services in West Java Province, Indonesia.	Maternal health, Indonesia, Qualitative , Case Study	To explore health workers' and community members' persoectives about maternal and child health services in West Java Province. The study also seek justifications of using traditional birth attendants and preference of using home delivery.	Qualitative, case study	Economic, socio-cultural as well as access to health facility are reasons for using and relying more on traditional birth attendants as well as home deliveries.	More use of qualitative methodology to evaluate programme
Donovan, K.	2010	. Area, 42(1), 117-126.	Doing social volcanology: exploring volcanic culture in Indonesia	Indonesia, Disaster Rism Management, Ethnography, case Study	This paper provides an insight of the importance of social volcanology particularly the cultural and socio-economic factors that influence community reactions to volcanic hazards, using a case study of 2006 eruption of Mount Merapi in Indonesia	Qualitative, case Study, ethnography	The study reveals a strong cultural influence within the communities who live around the Mount Merapi. The villagers believe that Mount Merapi is not just a volcano but also a home to many spiritual/unseen creatures. Livelihoods is main socio-economic factor that makes the local community stay in the same area. Livestock represent the villagers' sole investment. When there is eruption and their houses are not affected, then they would not leave the place. Or even the villagers were evacuated in temporary shelters, they still returned to their affected villages to check their livelihoods	The researcher suggests the use of qualitative research – not limited to a quantitative vulnerability assessment that does not provide local communities' desires and beliefs. In examining and designing eruption response plan, it is important to consider local cultural and socio-economic factors.

Appendix B: Example - Consultation email with stakeholders in Indonesia

Gmail Stenly SAJOW <ssajow@gmail.com>

Perkenalan - PHD Research

Stenly SAJOW <ssajow@gmail.com> 30 September 2016 at 16:27
To: wara.osing@gmail.com
Cc: dr.iratresna@gmail.com

Kepada Yth: Drg. Wara Osing

Perkenalkan, nama saya Stenly SAJOW. Saya mendapatkan kontak Ibu Wara dari sejawat saya Dr. Ira Tresna yang mana beliau aktif di Pusat Krisis Kesehatan, Kementerian Kesehatan.

Saya seorang dokter lulusan Sam Ratulangi University di Manado Sulawesi Utara pada tahun 2002. Saat ini baru memulai PHD di Auckland University of Technology, New Zealand. Adapun judul dari kajian saya sekarang adalah: *Integration of reproductive health in disaster [Minimum Initial Service Package for Reproductive Health in Crisis Settings] into Disaster Risk Management - Qualitative Case Study from Indonesia.* Pengintegrasian Kesehatan Reproduksi dalam Bencana (Paket Pelayanan Awal Minimum Kesehatan Reproduksi Pada Krisis Kesehatan dalam Manajemen Pengurangan Risiko – Pembelajaran Kasus Kualitatif dari Indonesia

Harapan saya, semoga kajian ini dapat memberikan sumbangan bagi Indonesia khususnya dalam melihat sejauh mana proses integrasi ini telah terjadi dengan melihat faktor-faktor yang mendukung dan yang kurang mendukung daripada proses integrasi ini.

Untuk itu saya ingin berkontak dengan Ibu dengan harapan ke depannya dapat memberikan masukan semasa menyelesaikan PhD saya. Pada saat ini saya sedang memfinalisasikan proposal saya dan berfikir untuk mengambil kejadian banjir di Karawang tahun 2014 sebagai kasus kajian saya untuk melihat proses pemenuhan kesehatan reproduksi pada saat bencana tersebut.

Saya sangat berterima kasih apabila Ibu dapat memberikan masukan kepada saya, apakah banjir Karawang yang saya pilih adalah tepat. Sekiranya, ada kejadian bencana lain [setelah 2013] yang saya boleh teliti, mohon petunjuknya.

Pada kesempatan ini saya juga ingin bertanya apakah Kementerian Kesehatan Indonesia mempunyai Multi-Tahun Rencana Kerja Kesehatan Indonesia termasuk Kesehatan Reproduksi.

Kalau tidak ada aral melintang, saya akan melakukan kajian lapangan di Indonesia pada bulan April tahun 2017 dan saya berharap dapat bertemu Ibu langsung untuk membahas lebih detil rencana kajian saya.

Terima kasih banyak, Ibu. Semoga saya bisa mendapatkan respon dari Ibu.

Salam,

Stenly SAJOW

Stage 2: Prepare

Appendix C: Case Study Protocol

Stage	Main Activity	Reasons	Timeline
Plan	**Identify and compare with other methods.**	• To understand what and when to use the case study method; also to find the best case study model that suits epistemological commitment and philosophical stance, and to define the case and case study	Aug–Sep 2016
	Literature Review • Literature/past research review using a critical review approach • Identify gaps, empirical knowledge, research methodologies and methods, and key research question of the study	• To gain knowledge about the study topic and how to pursue • To define the case to be studied	Throughout the entire study
Design	**Consultation with stakeholders in Indonesia**	• To gain knowledge about cases 'real world setting' (Yin, 2014 p.16) that could be used to understand the process of integration of MRH into DRM in Indonesia • To have access to the locations of the case study	Sep–Oct 2016
	Identify case and set boundaries • Identify a case study → Represent one of the frequent disasters in Indonesia • Set boundaries: place, people, and time → The eruption of Mount Sinabung in 2013 • Set a research question and objectives	• To set the logical sequence that connects the data and the research question • To ensure the case study has five components (Yin, 2014): a. Research question b. Objectives/prepositions c. Unit of analysis d. Logic linking between data and objectives/prepositions e. Criteria for interpreting the findings	Oct–Nov 2016
	Crafting instruments and protocols • Drafting indicative questions • Drafting demographic sheets • Drafting information sheets, consent forms, flyers, field safety procedures and budget	• To guide the 'execution' of the case study	Nov–Dec 2016
Prepare	**Train for specific case study** • The primary researcher attend workshops related to qualitative studies, data analysis such as thematic workshop and NVivo course; as well as equip with soft-skills including interview skill workshop	• To build and enhance skills in the areas of asking right questions, listening, being adaptive and flexible, academic writing, and other personal development	Aug 2017
	Consultations with stakeholders in Sinabung	• To have 'access' to the field • To gain advice on the local setting and better picture on how to conduct the field study including logistics, transport, accommodation, and other related arrangements • To select sites for pilot and actual studies	Sept 2016–July 2017

	Prepare case study protocol	• To guide the execution of the case study research as well as ensure the rigour and reliability of the study	V1: Oct 2016 V2: Jan 2016 V3: July 2017 V4: Nov 2017
	Obtain AUT ethics approval	• To ensure the case study is conducted in acceptable behaviour and actions	Apr–July 2017
	Obtain local ethics approval	• To ensure the case study is conducted in acceptable behaviour and actions, according to the local context • To get permission from the local authorities to undertake a research	Aug–Oct 2017
	Expert opinion ➔ MRH experts from Indonesia	• To review and provide feedback on the draft indicative questions and demographic sheet, based on Indonesian context	June–Aug 2017
	Pre-understanding exercise	• To make sure that the interview technique are followed • To build awareness about the background of the primary researcher to avoid bias	July–Aug 2017
	Appointment of a field supervisor ➔ An academic and practitioner with strong MRH background based in Indonesia	• To ensure supervision while conducting fieldwork in Indonesia • To provide guidance and advice on the local context • To help in obtaining local ethics approval	June 2017
	Appointment of female research assistant ➔ A woman with experience and knowledge in conducting research based in Medan (case study site) as well as familiar with the local context. • Recruitment of a female research assistant • Signing a contract and confidentiality form • Training and familiarisation with the research	• To conduct an interview with female participants, in case they do not want to be interviewed by the primary researcher • To accompany the primary researcher during interviews with a female participants • To help in logistics, arrange transport, and prepare/set the location of the interview • To help in transcriptions and/or check the draft transcriptions done by the primary researcher, to ensure the quality of transcriptions. Vice versa, the primary researcher, also check the draft transcriptions of the female research assistant	Aug 2017
	Pilot study	• To gain better knowledge about the situation on the ground: convenience, access, and geographical locations • To test the draft indicative questions and demographic sheets and highlight lessons learned • To select sites for the actual study • To prepare field access for the actual study	Dec 2017
Collect *Concurrent and iterative data collection*	**Phase 1: Document and policy analysis** • Collect and review relevant documents and policies. This included disaster management regulations, health plan, guidelines, and reports from relevant	• To gain in-depth understanding from the three different sources of evidence (construct validity) regarding the phenomenon as well as maintain a chain of evidence	Dec 2017–Apr 2018

and analysis.	stakeholders, including form the national disaster management authorities and Ministry of Health **Phase 2: FGDs** • FGDs with: a. MRH users (i.e. women who were pregnant during the 2013 eruption) b. Policy implementers (i.e. community leaders) c. MRH providers (i.e. health personnel) **Phase 3: Individual interviews** **a. With women, community leaders and health personnel in Sinabung** • Selected FGDs participants were chosen for individual interviews • Selected because the information that they provided either **repeated in several places, was surprising or unusual;** therefore, they were invited for individual interviews to gain in-depth understanding regarding the phenomenon **b. With policymakers in Karo, Medan and Jakarta** • Participants are those who are working at managerial level	• Data from the three phases were triangulated	
Analyse *Concurrent and iterative data collection and analysis.*	**Participant validation** • Validations of women, community leaders and health personnel in Sinabung • Validations of policymakers in Karo, Medan and Jakarta	• To ensure rigorous of the case Study, particularly related to member-checking and confirmability • To gain clarification and consensus with participants regarding the information provided during the interviews • To provide opportunity for the participants to add or delete the information provided during the interviews • To provide opportunity for the researcher to clarify, check, and ask in-depth questions regarding issues that were mentioned during the interviews • To provide opportunity for the researcher to thank participants for their voluntary participation in the study	Apr 2018
	Transcriptions, translations and back translations • Transcriptions of recorded interviews (i.e. FGDs and individual interviews); • Selected transcriptions were translated into English;	• To convert the audio recorders into writing that help to understand the information/data	Dec 2017–Dec 2018
	Appointment of a translator • Recruitment of a translator • Signing a confidentiality form	• To avoid misinterpretation/lost or lacking the full subtlety of meaning of the English version	Jan–Apr 2018

	• The English version of transcriptions were sent to a translator for back translations		
	'Unit' data analysis 4.A. MRH users, MRH providers, policy implementers, using a thematic approach: a. Data analysis: develop coding, sub-themes and themes of FGDs and interviews with women participants b. Data analysis: develop coding, sub-themes and themes of FGDs and interviews with community leaders participants c. Data analysis: develop coding, sub-themes and themes of FGDs and interviews with health personnel participants 4.B. Policymakers: using a thematic approach: d. Data analysis: develop coding, sub-themes and themes of interviews with policymaker participants	• To analyse and identify data elements that correspond to the research question and its objectives. • To analyse data using the thematic approach of Braun and Clarke: a. Familiarisation with data; b. Generating initial code c. Searching for sub-themes and themes d. Reviewing sub-themes and themes e. Defining and naming themes f. To use time-series analysis/chronological order	Dec 2017–Feb 2019
	Triangulation (cross analysis) MRH users, MRH providers, policy implementers and policymakers as well as documents and policies, using thematic approach	• To look beyond initial impressions and to triangulate findings from documents/policy documents against interviews to answer the research question • To analyse data using the thematic approach of Braun and Clarke: Familiarisation with data Generating initial code Searching for sub-themes and themes Reviewing sub-themes and themes Defining and naming themes • To use time-series analysis/chronological order	Feb–May 2019
Report and Share	**Targeting a case study report** 1. Identify potential journal for publications 2. Write papers for publications 3. Writing a PhD thesis	• To review the draft case study and get feedback from peers to strengthen the case study → as part of validating the procedure	**Share (conferences, paper for publication):** Aug 2018–present **Report (writing thesis):** May–Oct 2019

Appendix D: AUTEC Ethics Approval

AUTEC Secretariat

Auckland University of Technology
D-88, WU406 Level 4 WU Building City Campus
T: +64 9 921 9999 ext. 8316
E: ethics@aut.ac.nz
www.aut.ac.nz/researchethics

18 July 2017

Eleanor Holroyd
Faculty of Health and Environmental Sciences

Dear Eleanor

Re Ethics Application: **17/231 Better preparedness for better responses: Integrating maternal and reproductive health into disaster risk management: A qualitative case study from Indonesia**

Thank you for providing evidence as requested, which satisfies the points raised by the subcommittee of the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved for three years until 18 July 2020.

Standard Conditions of Approval

1. A progress report is due annually on the anniversary of the approval date, using form EA2, which is available online through http://www.aut.ac.nz/researchethics.
2. A final report is due at the expiration of the approval period, or, upon completion of project, using form EA3, which is available online through http://www.aut.ac.nz/researchethics.
3. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form: http://www.aut.ac.nz/researchethics.
4. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
5. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.

Please quote the application number and title on all future correspondence related to this project.

AUTEC grants ethical approval only. If you require management approval for access for your research from another institution or organisation then you are responsible for obtaining it. If the research is undertaken outside New Zealand, you need to meet all locality legal and ethical obligations and requirements. You are reminded that it is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard.

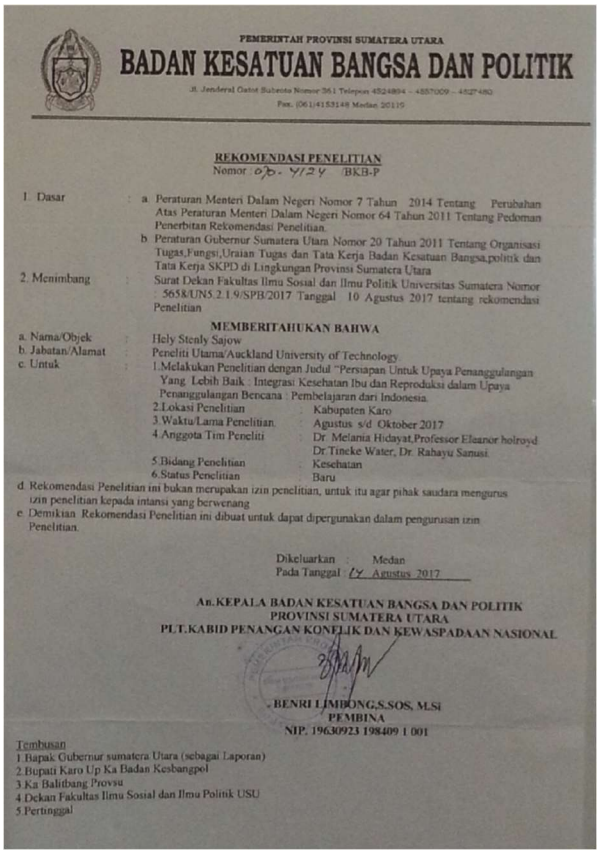
For any enquiries, please contact ethics@aut.ac.nz

Yours sincerely,

Kate O'Connor
Executive Manager
Auckland University of Technology Ethics Committee

Cc: ssajow@gmail.com; steniy.sajow@aut.ac.nz; Tineke Water

Appendix E: Local Ethics Approval – LITBANGKES



PEMERINTAH PROVINSI SUMATERA UTARA

BADAN KESATUAN BANGSA DAN POLITIK

Jl. Jenderal Gatot Subroto Nomor 361 Telepon 4524894 – 4557009 – 4527480
Fax. (061)4153148 Medan 20119

REKOMENDASI PENELITIAN
Nomor : 070/ 7124 /BKB-P

1. Dasar : a. Peraturan Menteri Dalam Negeri Nomor 7 Tahun 2014 Tentang Perubahan Atas Peraturan Menteri Dalam Negeri Nomor 64 Tahun 2011 Tentang Pedoman Penerbitan Rekomendasi Penelitian.
b. Peraturan Gubernur Sumatera Utara Nomor 20 Tahun 2011 Tentang Organisasi Tugas,Fungsi,Uraian Tugas dan Tata Kerja Badan Kesatuan Bangsa,politik dan Tata Kerja SKPD di Lingkungan Provinsi Sumatera Utara
2. Menimbang : Surat Dekan Fakultas Ilmu Sosial dan Ilmu Politik Universitas Sumatera Nomor : 5658/UN5.2.1.9/SPB/2017 Tanggal 10 Agustus 2017 tentang rekomendasi Penelitian

MEMBERITAHUKAN BAHWA

a. Nama/Objek : Hely Stenly Sajow
b. Jabatan/Alamat : Peneliti Utama/Auckland University of Technology
c. Untuk : 1.Melakukan Penelitian dengan Judul "Persiapan Untuk Upaya Penanggulangan Yang Lebih Baik : Integrasi Kesehatan Ibu dan Reproduksi dalam Upaya Penanggulangan Bencana : Pembelajaran dari Indonesia.
2.Lokasi Penelitian : Kabupaten Karo
3.Waktu/Lama Penelitian. : Agustus s/d Oktober 2017
4.Anggota Tim Peneliti : Dr. Melania Hidayat,Professor Eleanor holroyd Dr.Tineke Water, Dr. Rahayu Sanusi
5.Bidang Penelitian : Kesehatan
6.Status Penelitian : Baru

d. Rekomendasi Penelitian ini bukan merupakan izin penelitian, untuk itu agar pihak saudara mengurus izin penelitian kepada intansi yang berwenang
e. Demikian Rekomendasi Penelitian ini dibuat untuk dapat dipergunakan dalam pengurusan izin Penelitian.

Dikeluarkan : Medan
Pada Tanggal : 17 Agustus 2017

An.KEPALA BADAN KESATUAN BANGSA DAN POLITIK
PROVINSI SUMATERA UTARA
PLT.KABID PENANGAN KONFLIK DAN KEWASPADAAN NASIONAL

. BENRI LIMBONG,S.SOS, M.Si
PEMBINA
NIP. 19630923 198409 1 001

Tembusan
1.Bapak Gubernur sumatera Utara (sebagai Laporan)
2.Bupati Karo Up Ka Badan Kesbangpol
3.Ka Balitbang Provsu
4.Dekan Fakultas Ilmu Sosial dan Ilmu Politik USU
5.Pertinggal

PEMERINTAH PROVINSI SUMATERA UTARA

BADAN KESATUAN BANGSA DAN POLITIK

Jl. Jenderal Gatot Subroto Nomor 361 Telepon 4524894 – 4557009 – 4527480
Fax. (061)4153148 Medan 20119

REKOMENDASI PENELITIAN
Nomor : 070 - 312 /BKB-P

1. Dasar : a. Peraturan Menteri Dalam Negeri Nomor 7 Tahun 2014 Tentang Perubahan Atas Peraturan Menteri Dalam Negeri Nomor 64 Tahun 2011 Tentang Pedoman Penerbitan Rekomendasi Penelitian.
b. Peraturan Gubernur Sumatera Utara Nomor 3 Tahun 2017 Tentang Organisasi Tugas,Fungsi,Uraian Tugas dan Tata Kerja Badan Kesatuan Bangsa,politik dan Tata Kerja SKPD di Lingkungan Provinsi Sumatera Utara
2. Menimbang : Surat Dekan fakultasKesehatan Masyarakat Universitas Sumatera Utara Nomor : 1203/UN5.2.1.10/PPM/2018 Tanggal 01 Pebruari 2018 tentang rekomendasi Penelitian

MEMBERITAHUKAN BAHWA

a. ama/Objek : Hely Stenly Sajow
b. Jabatan/Alamat : Peneliti Utama / Auckland University Of Technology, Auckland – New Zealand
c. Untuk : 1.Melakukan Penelitian dengan Judul . Persiapan Untuk Upaya Penanggulangan Yang Lebih Baik : Integrasi Kesehatan Ibu dan Reproduksi Dalam Upaya Penanggulangan Bencana : Pembelajaran dari Indonesia.
2.Lokasi Penelitian : Kabupaten Karo
3.Waktu/Lama Penelitian. : Pebruari s/d Juli 2018
4.Anggota Tim Peneliti : Dr. Melania Hidayat, Professor Holroyd, Dr. Tineke Water, Dr. Sri Rahayu Sanusi, SKM, M. Kes, PhD
5.Bidang Penelitian : Kesehatan
6.Status Penelitian : Baru

d. Rekomendasi Penelitian ini bukan merupakan izin penelitian, untuk itu agar pihak saudara mengurus izin penelitian kepada intansi yang berwenang
e. Demikian Rekomendasi Penelitian ini dibuat untuk dapat dipergunakan dalam pengurusan izin Penelitian.

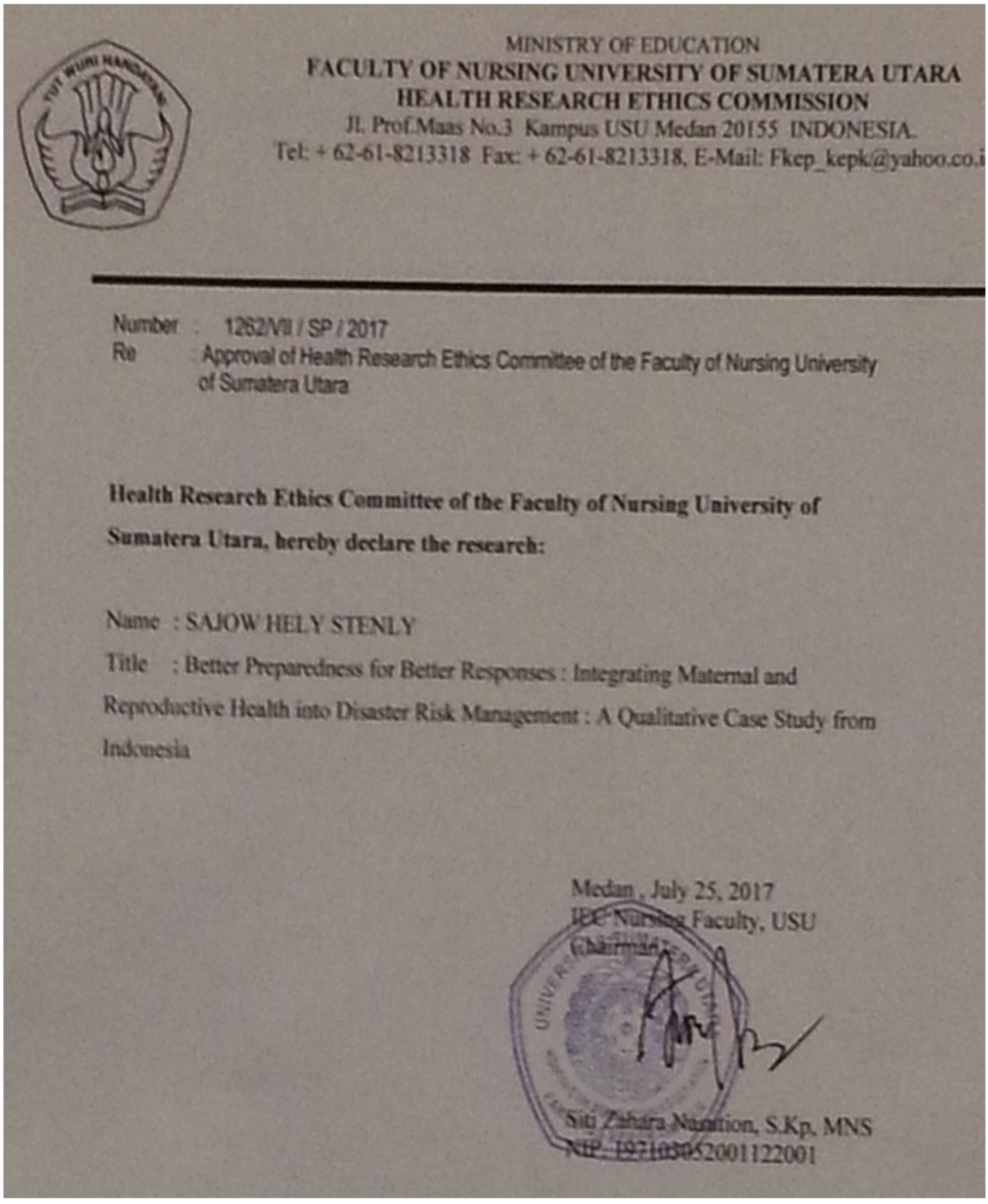
Dikeluarkan : Medan
Pada Tanggal : 8 Januari 2018

PL. KEPALA BADAN KESATUAN BANGSA DAN POLITIK PROVINSI SUMATERA UTARA
KEPALA BIDANG KETAHANAN EKONOMI,SOSIAL BUDAYA DAN ORMAS

DRA. MALENTINA GINTING
PEMBINA TK I
NIP. 196609026 199404 2 002

Tembusan
1.Bapak Gubernur sumatera Utara (sebagai Laporan)
2.Bupati Karo Up Ka Badan Kesbangpol
3.Ka Balitbang Provsu
4.Dekan fakultasKesehatan Masyarakat Universitas Sumatera

Appendix F: Local Ethics Approval – Nursing School North Sumatera University



MINISTRY OF EDUCATION
FACULTY OF NURSING UNIVERSITY OF SUMATERA UTARA
HEALTH RESEARCH ETHICS COMMISSION
Jl. Prof.Maas No.3 Kampus USU Medan 20155 INDONESIA.
Tel: + 62-61-8213318 Fax: + 62-61-8213318, E-Mail: Fkep_kepk@yahoo.co.i

Number : 1262/VII / SP / 2017
Re : Approval of Health Research Ethics Committee of the Faculty of Nursing University of Sumatera Utara

Health Research Ethics Committee of the Faculty of Nursing University of Sumatera Utara, hereby declare the research:

Name : SAJOW HELY STENLY

Title : Better Preparedness for Better Responses : Integrating Maternal and Reproductive Health into Disaster Risk Management : A Qualitative Case Study from Indonesia

Medan , July 25, 2017
HEC Nursing Faculty, USU
Chairman

Siti Zahara Nasution, S.Kp, MNS
NIP. 197105052001122001

Appendix G: Research Safety Protocol

Title of research:

Responding to Maternal and Reproductive Health Needs of Pregnant Women during a Disaster in Indonesia

Researcher:

Stenly Sajow

Mode of research that requires researcher safety protocol:

Meeting with communities in a public place or private room within an office/organisation

Dates of research:

July 2017 – January 2018

Location of research:

Sinabung, Medan and Jakarta of Indonesia

Possible risks:

- Natural hazards including re-eruption of Mount Sinabung, earthquake;
- Risks from public to personal safety;

Factors employed to reduce risks to natural hazards:

- **Accommodation:** The primary researcher will be staying in Medan, which is located 80kms or around 3 hours by road from Mount Sinabung. Regular public transport is available and/or hiring a minivan is easily to be arranged;
- **Communication:** The primary researcher will carry mobile phone and have a contact list of important persons/bodies. Villages and temporary shelters around Mount Sinabung are reachable with mobile phone and landline; Weekly communication will be set up with the field supervisor. Furthermore, should any disaster occur, an emergency phone will be made anytime with the field supervisor;

Factors employed to reduce risk from public to personal safety:

- **Access:** A female [and probably Muslim] Research Assistant will be recruited to ensure maximal and positive interaction with women respondents;
- **Safety:** To take only required equipment whilst in a village; Payment through ATM machine in order to avoid bringing money in cash;

Protokol Keselamatan untuk Peneliti

Judul Penelitian:

Pemenuhan kebutuhan kesehatan reproduksi ibu hamil pada saat bencana di Indonesia

Peneliti:

Stenly Sajow

Cara penelitian yang membutuhkan Protokol Penelitian:

Pertemuan dengan masyarakat di tempat umum atau khusus dalam kantor

Tanggal pelaksanaan penelitian:

July 2017 – January 2018

Lokasi penelitian:

Sinabung, Medan dan Jakarta, Indonesia

Resiko resiko yang mungkin terjadi:

- Bencana alam seperti gunung berapi dan gempa bumi;
- Resiko-resiko yang berkaitan dengan keselamatan diri;

Hal hal yang dilakukan untuk mengurangi tingkat resiko:

- **Tempat tinggal:** Peneliti utama akan tinggal di Medan selama penelitian. Medan terketak sekitar 80 kms atau sekitar 3 jam jarak tempuh untuk ke lokasi sekitar gunung Sinabung. Transportasdi umum atau sewa dapat di kalukan dengan mudah;
- **Komunikasi:** Peneliti utama akan terus membawa telepon genggam dan memiliki daftar kontak dari pihak pihak terkait. Lokasi sekitar gunung Sinabung bisa di jangkau dnegan telepon. Pada keadaan normal, komunikasi dnegan pembimbing lapangan akan dilakukan paling tidak sekali dalam setiap minggu. Apabila terjadi bencana maka peneliti utama akan segera menghubungi pembimbing lapangan.

Hal hal yang dilakukan untuk mengurangi resiko keselamatan di tempat umum:

- **Akses:** Seorang wanita [dan lebih disukai apabila beragama Muslim] akan di rekrut sebagai Asisten Peneliti untuk memaksimalkan interaksi dengan peserta wanita.
- **Keselamatan:** Hanya membawa barang barang yang penting saat bepergian ke lapangan. Sebisanya, pembayaran akan di lakukan lewat ATM untuk mengurangi resiko membawa uang kash.

FIELD SAFETY PROCEDURE

AUT

Natural Disasters

Eruption

Preparation:
a. Identify route for evacuation;
b. Keep a spare batteries for mobile phone;

During and after an eruption:
a. Assess the situation;
b. Listen to up to date information from radio;
c. Contact authority and inform the fields supervisor;

Earthquake

Preparation:
a. Designate 'safe places';
b. Have a flashlight, keep a spare batteries for mobile phone;

During and after an earthquake:
a. 'Drop, cover, and hold on' in each safe place;
b. Exit from a building;
c. Contact authorities and the field supervisor;

Robbery

Precautions

a. Take only required equipment whilst going to the field;
b. Try not to walk alone;
c. Do not talk to stranger;
d. Try to be in the field during day time. Avoid going out during night time;

During and After a Robbery

a. Remain calm and obey the robber;
b. After the thief left, try to contact Police Office;
c. Notify the Field Supervisor;

Health and Safety for the Researcher Team

Have a list of emergency phone numbers	Prepare a first aid kit box	Keep mobile phone on active mode;
Stay in a safe hotel / accommodation	Always have the female research assistant when interact with women	Fill up when fuel tank gets to half
Take pictures of all receipts	Do not share your contact with a stranger	Avoid raw food and drink plenty of water

Important Contacts

Sinabung and Medan

	Location	Contact[s]
Kantor Polisi [Police Offices]: - Kecamatan Payung - Kecamatan Naman Teran	Sinabung	
Ambulance	Sinabung	
Puskesmas [Primary Health Care]	Sinabung	
Rumah Sakit Daerah [Secondary Health Care] Sinabung	Sinabung	
Rumah Sakit Propinsi [Tertiary Health Care] Medan	Medan	
Kantor Camat [Sub-District Offices]: - Kecamatan Payung - Kecamatan Naman Teran	Sinabung	

Jakarta

	Location	Contact[s]
Crisis Centre of the Ministry of Health	Jl H.R. Rasuna Said Blok X.5 Kav. 4-9, Blok A, Lt.6 Jakarta 12950	0812 1212 3119
Badan Nasional Penanggulangan Bencana [National Disaster Management Office]	Graha BNPB - Jl. Pramuka Kav.38 Jakarta Timur 13120	021-29827793

Field Supervisor

	Location	Contact[s]
Dr. Melania HIDAYAT	Jakarta	[0062] 212 980 2300 ext 314 [0062] 811 155 036

Supervisors

	Location	Contact[s]
Professor Eleanor HOLROYD	Auckland, New Zealand	[0064] 09 921 9999 ext 5298
Dr. Tineke WATER	Auckland, New Zealand	[0064] 09 921 9999 ext 7335

Appendix H: Example – Letter to Experts in Indonesia

Auckland University of Technology
Private Bag 92006, Auckland 1142, NZ
T: +64 9 921 9999
www.aut.ac.nz

Auckland, 17 July 2017

RE: Panel Expert – a study titled: Better preparedness for better responses: Integrating maternal and reproductive health into disaster risk management: A qualitative case study from Indonesia

Dear Ira Tresna,

We are writing to thank you for agreeing to take part in the expert panel of the above mentioned study. We value your expertise in the fields of maternal and reproductive health, disaster management and the Indonesian context.

Your role on this panel is important in assisting with the preparatory stage of the research. As a panel expert you will be expected to review the indicative semi-structured interview questions prior to their use.

Please be informed that currently the ethics application for this study is being reviewed by the University. At the same time, an ethics approval will also be obtained from the LITBANGKES of the MoH of Indonesia.

Your support, which will help us to achieve a quality research study, will be greatly appreciated.

Sincerely yours,

Professor Eleanor HOLROYD
First Supervisor

Dr. Tineke WATER
Second Supervisor

Dr. Melania HIDAYAT
Field Supervisor

Stenly Hely SAJOW
PhD Student

To:
Dr. Ira Tresna
Kepala Sub Bidang Pencegahan dan Mitigasi,
Pusat Penanggulangan Krisis
Ministry of Health
Indonesia

Attachments:
1. Expert Opinion Sheet;
2. Draft Demographic Sheets;

Appendix I: Female Research Assistant – Job Descriptions

Justification:

a. **The subject of the study**. The study requires information related to MRH. As a male researcher doing a study within health sector, having a female research assistant to accompany during interview shows morality and ethical aspects by respecting female participants. This also another way of establishing rapport and building trust to as well as considering the sensitivity.
b. **Gender issue.** Having a same gender during an interview, promotes openness and engagements. This is part of rigour and ethics during conducting a qualitative health research.
c. **Cultural issue**. It is culturally appropriate, particularly in Indonesian culture and widely in Asia context, to have a woman talking to other women.
d. **Geographical location.** Given the 2013 eruption of Mount Sinabung was affected the predominantly Muslim villages, having someone from the same religion is crucial.

Main Responsibilities:

The female research assistant is expected to conduct the interview with women participants in Sinabung. In addition, the Research Assistant will provide the following support:

A. Communication
- Introduce the primary researcher to the communities as well as to the participants;
- Ensure participants arrive on time;
- Ensure the venue of FGD and Individual interview are ready;
- Support arrange meetings with stakeholders;

B. Administration
- Remind the primary researcher to ensure participants are being oriented on the research purpose and other aspects of research. Therefore, those who would like to participate will understand and fill the Consent Form and Demographic Sheet;
- Support in time management as time keeper;

C. Logistics
- Ensure the food are ready and served during the sessions;
- Support in contacting transport including rental vehicle;

D. Miscellaneous

Experience and educational background:

a. Bachelor / First degree in either public health, social work, and/or disaster management;
b. Computer literate;
c. Experience in conducting [qualitative] research is preferable;

Competencies:

a. Ability to work as a team;
b. Honest and reliable;
c. Respect diversity and local culture;

Appendix J: Female Research Assistant – Signed Confidentiality

Perjanjian Kerahasiaan
Asisten Peneliti

Sebagai anggota tim peneliti ini, saya mengerti bahwa saya mungkin memiliki akses terhadap informasi rahasia tentang lokasi studi dan peserta. Dengan menandatangani pernyataan ini, saya menunjukkan pemahaman saya tentang tanggung jawab saya untuk menjaga kerahasiaan dan menyetujui hal berikut:

- Saya mengerti bahwa nama dan informasi identitas lainnya tentang lokasi studi dan peserta benar-benar rahasia.
- Saya setuju untuk tidak membocorkan, menerbitkan, atau memberitahukan orang-orang yang tidak berwenang atau kepada publik atas informasi yang diperoleh dalam perjalanan proyek penelitian ini yang dapat mengidentifikasi orang-orang yang berpartisipasi dalam penelitian ini.
- Saya mengerti bahwa saya tidak membaca informasi tentang lokasi studi atau peserta, atau dokumen rahasia lainnya, atau mengajukan pertanyaan kepada peserta studi untuk mendapatkan informasi pribadi saya tetapi hanya sejauh dan untuk tujuan melaksanakan tugas saya atas penelitian ini.
- Saya setuju untuk memberitahukan penyidik utama setempat segera jika saya menyadari adanya pelanggaran kerahasiaan atau situasi yang sebenarnya yang dapat mengakibatkan pelanggaran, apakah ini termasuk pihak saya atau pihak lain.

Tanda Tangan Asisten Peneliti	Hari/Tanggal	Nama
	Rabu/30-08-2017	Safrina Hayati Hasibuan

Di setujui oleh pihak Komisi Etik dari Auckland University of Technology pada tanggal *18 July 2017*,
Nomor REferensi AUTEC: *17 / 231*

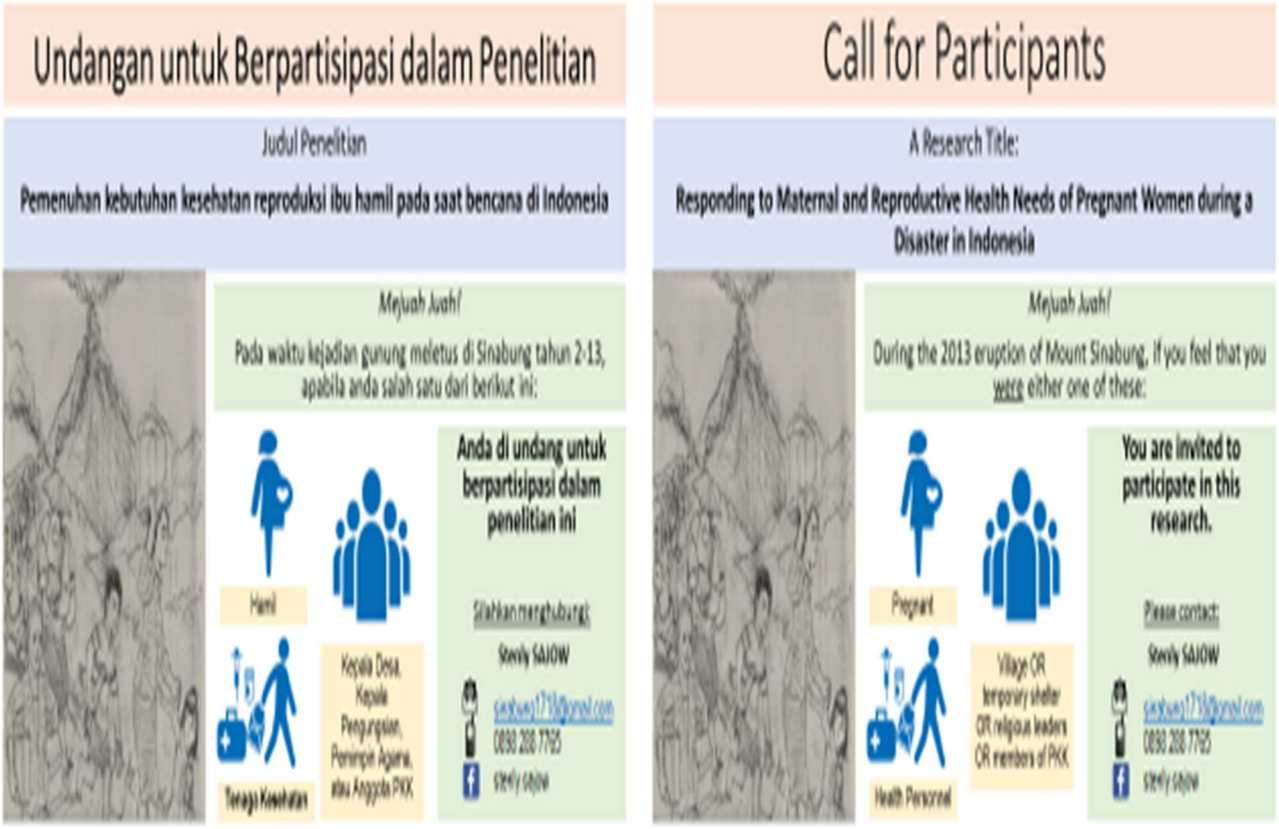
Appendix K: Pilot Study: Lessons Learnt

Interviews	Groups/participant stakeholders	Key lessons learned
Focus group discussions	Women	- Timing: It was found that the best time to gather women was at night after they returned from their farm, finished praying, had eaten supper, and cooked food and prepared farming tools for the following day. The ideal time to gather women and community leaders was after 7:30 pm. This allowed sufficient time for the researcher to explain the informed consent and take demographic information. - Male researcher. Although none of the female participants raised an objection during the sessions, it was decided that during the actual study, participants will still be asked for their preference and allowed to choose who should interview them. - Setting during the FGD session: It was found that during the session, women brought their children with them. Some of the children slept but some remained awake. They could cause noise and distract their mother while talking. Therefore, during sessions with women, the children who accompany them will be given giving papers and colour pencils to keep them engaged with something.
	Community leaders	- Timing: The best time to meet the community leaders was after 7:00 pm. They could meet people after they returned from their farm, finished praying, had eaten supper and prepared farming tools for the following day. - Setting during the FGD session: Some participants had to step out for a while to answer phone calls during the session. Although it was announced that it would better to avoid phone calls during the session, the researcher could not stop the community leaders from doing so.
	Health personnel	- Timing: The best time to meet with health personnel was after 3:00 pm where they were less occupied or finished working.
Individual interviews	Women	- Timing: The individual interview was conducted at 07:30 pm. This was after the woman returned from her farm. The interview was started after the woman had finished eating supper with her family. - Setting during the individual interview session: During the interview session, the husband and children were in and out of the living room in her house. Her children came and bothered the mother during the interview. - Male researcher. Although the woman did not raise any objection to have a male researcher, she was asked before the interview started.
	Community leaders	- Timing: The interview was conducted at 6:30 am. The community leader preferred to be interviewed before he went to his farm. - Setting during the interview session: Since the interview was conducted at his house, the wife and son were around. They were politely asked not to listen to the interview.
	Health personnel	- Timing: The interview with the health personnel was at 3:00 pm. At that time, there was no patient at the clinic. On principle, the

		midwife preferred to be interviewed after she finished working at the clinic.
	Policymakers	**1. Individual interview with a policymaker in Medan:** - Timing and setting: The interview was conducted during office hours. It took place at 11:30 am. - The researcher took time to make an appointment with the participant, as she rescheduled twice due to a last-minute call from her office. - It was found that when making an appointment with a new person, the communication should start with sending a text message before making a phone call. **2. Individual interview with a policymaker in Jakarta:** - Following the initial informal discussion in Jakarta in early December 2017, the interview was conducted through a Skype call on 28 December. It was initiated after the FGDs and individual interviews with MRH users, policy implementers and policymakers at the provincial levels. - Setting during the interview session: Skype call with a good Internet connection could be an alternative mode of communication for the interview. It saved time during the commute from one place to another. Having more than two meetings in two different places in Jakarta over the course of a single day seems challenging. The traffic in the city was quite heavy. Carefully scheduling the interviews would ensure the quality and quantity of information related to this study from the right participants.

Stage 3: Collect

Appendix L: Poster Advertisement – Call for Participants



Appendix M: Participant Information Sheet

Information Sheet
Woman
Focus Group Discussion

Date Information Sheet Produced

20 May 2017

Project Title

Responding to Maternal and Reproductive Health Needs of Pregnant Women during a Disaster in Indonesia

An Invitation

Mejuah juah! Selamat pagi.

My name is Stenly SAJOW. I am a PhD student from Auckland University of Technology in New Zealand.

I would like to invite you to participate in my research **on responding to maternal and reproductive health needs of pregnant women during a disaster in Indonesia**.

Your experience of being pregnant and how you used maternal and reproductive health services during the 2013 eruption of Mount Sinabung would help this team of researcher to understand what worked and how the maternal and reproductive health services for pregnant women could be improved in the future.

I am the main researcher of this project. Other members of the project are my supervisors: Professor Eleanor HOLROYD, Dr. Tineke WATER, and Dr. Melania HIDAYAT.

Your participation in this research is voluntary (your choice). You can choose to withdraw at any time prior to data collection.

What is the purpose of this research?

This research aims to find out how prepare our country, Indonesia, to provide maternal and reproductive health services to pregnant women during a disaster. It is hoped that your involvement in this research will produce a recommendation for better provision of maternal and reproductive health services, particularly to pregnant women, during a disaster response in Indonesia.

Why am I being invited to participate in this research?

You have been invited to participate in this research because you were pregnant during the 2013 eruption of Mount Sinabung.

What will happen in this research?

If you decide to take part in this research, you will be sitting in a group with other women who were pregnant during the 2013 eruption. Each group consists of about 8 people. Each session will last around 90 to 120 minutes.

Together with other women, you will be discussing focus issues and answering questions. Please feel free to raise your hand and speak; or clarify any question if it is not quite clear; or refuse any question/s. Please only one-voice-at- a-time. There is no right or wrong answer. Everybody has an equal chance to speak up. We value your voice.

My research assistant will be asking questions and will be recording the process through taking notes and tape recording.

Your active participation in the discussion is highly appreciated.

What are the discomforts and risks?

During discussion, we might discuss the maternal and reproductive health services that were provided during the emergency response. Should you have experienced unsatisfactory services or have complaints regarding the services, please do not hesitate to mention this.

How will these discomforts and risks be alleviated?

In order to not feel ***tidak enak hati***, you might not need to say directly the name of the person or institution but instead use a different name. Please be informed that your real identity will not appear in the report or similar papers related to this research.

It is hoped that you will not continue the conversation or bring up issues that we discuss in a group outside and/or after the session.

Should after the discussion you feel unwell, discomfort, or ***tidak enak hati***, please do not hesitate to contact me. I will try my best to listen and perhaps refer you to the nearest Puskesmas.

What are the benefits?

By engaging in this research, you will have experience in participating in a research. You will have a chance to share your experience when you were pregnant during the 2013 eruption, particularly the things that you encountered when accessing maternal and reproductive health services.

Your participation will help in developing a conceptual framework for integration that will benefit more Indonesians. This will benefit other pregnant women who might be accessing maternal and reproductive health services during a disaster in the future. Your voices could help in saving future lives.

How will my privacy be protected?

All words that you are going to say during the discussion will be recorded. However, your identity will be protected by changing your name in the final report and or similar papers related to this research.

Once you understand and agree to participate, a paper called **Consent Form** will be given to you for you to read and sign. Your signed paper will be kept in a safe and confidential place. We will be making it in an electronic version and creating a specific code so that no other person can open it. The original signed paper and the electronic version will be kept in our university in New Zealand.

What are the costs of participating in this research?

There will no cost to participate in this research. Refreshments will be provided in appreciation if your time.

Only if you travel to this place by public transport, we will be giving you cash amounted of Rp.25,000 to substitute the bus fare.

What opportunity do I have to consider this invitation?

You will be given two weeks to decide whether you would like to take part in this study. During this time, should you have any question and/or something to clarify, please do not hesitate to contact me through email, Facebook messenger, or phone.

How do I agree to participate in this research?

Once you agreed to participate in this research, we will ask you to sign a Consent Form. This form shows that you have read and understood about your right in this research project and confidential issue during the research process.

After the session, should there will be further clarification, you will be contacted for further explanation [communication either by phone, Facebook messenger *'japri'*, Skype and/or email]. Vice versa, should you have/need further clarification, you are welcome to contact the primary researcher.

Will I receive feedback on the results of this research?

Yes, you will receive feedback as the results of this research. On the Consent Form you can chose to receive summary of key research findings.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Professor Eleanor HOLROYD, eleanor.holroyd@aut.ac.nz, 0064 09 921 9999 ext 5298

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, Kate O'Connor, ethics@aut.ac.nz , 921 9999 ext 6038.

Whom do I contact for further information about this research?

Researcher Contact Details:

Stenly SAJOW, ssajow@gmail.com or stenly.sajow@aut.ac.nz

Approved by the Auckland University of Technology Ethics Committee on 17 July 2017
AUTEC Reference number *17/231*.

Lembar Informasi

Perempuan

Diskusi Kelompok Terarah

Tanggal Lembar Informasi ini Dibuat

20 May 2017

Judul Penelitian

Pemenuhan kebutuhan kesehatan reproduksi ibu hamil pada saat bencana di Indonesia

Undangan

Mejuah juah! Selamat pagi.

Nama saya Stenly SAJOW. Saya adalah mahasiswa S3 di Auckland University of Technology di Selandia Baru.

Saya bermaksud untuk mengundang Anda untuk berpartisipasi di penelitian saya yang berkaitan dengan **masalah pemenuhan kesehatan reproduksi ibu hamil pada saat bencana di Indonesia**.

Pengalaman Anda saat hamil dan bagaimana Anda mendapatkan pelayanan kesehatan reproduksi pada saat kejadian meletusnya gunung Sinabung di tahun 2013 akan sangat membantu saya.

Saya sangat berterima kasih apabila Anda bisa membagikan pengalaman berkaitan dengan layanan kesehatan reproduksi apa sajakah yang disediakan untuk ibu hamil pada saat gunung Sinabung meletus; juga pendapat Anda mengenai layanan apa sajakah yang harus disediakan apabila terjadi bencana di kemudian hari.

Saya adalah peneliti utama. Pihak lain yang terlibat dalam penelitian ini adalah superviser saya: Professor Eleanor HOLROYD, Dr. Tineke WATER, dan Dr. Melania HIDAYAT.

Partisipasi Anda dalam penelitian ini adalah bersifat sukarela. Anda pun bisa mengundurkan diri kapan saja sebelum pengumpulan data.

Apakah tujuan penelitian ini?

Penelitian ini bertujuan untuk mengetahui seberapa siapkah negara kita, Indonesia, dalam penyediaan kesehatan reproduksi ibu hamil pada saat bencana.

Diharapkan bahwa penelitian ini, melalui partisipasi Anda, dapat menghasilkan kerangka rekomendasi untuk penanganan kesehatan ibu hamil yang lebih baik apabila terjadi kejadian bencana dikemudian hari.

Kenapa saya diundang untuk berpartisipasi dalam penelitian ini?

Anda diundang untuk berpartisipasi karena Anda hamil pada saat bencana gunung Sinabung meletus di tahun 2013.

Hal hal apa sajakah yang akan dilakukan kepada saya apabila setuju terlibat di penelitian ini?

Apabila Anda setuju untuk berpartisipasi, Anda akan duduk di diskusi kelopok bersama – sama dengan ibu-ibu yang lain yang juga hamil pada saat gunung Sinabung meletus. Tiap kelompok terdiri dari maksimal 8 orang. Setiap sesi diskusi akan berlangsung sekitar 90 sampai 120 menit.

Bersama dengan ibu-ibu lainnya, Anda akan berdiskusi dan menjawab beberapa pertanyaan – pertanyaan. Jangan segan untuk mengungkapkan pendapat. Kami sangat berterima kaish apabila Anda menacungkan tangan sebelum diberi kesempatan untuk berbicara. Anda juga diberikan kebebasan untuk bertanya dan mengklarifikasi apabila ada pertanyaan atau hal hal yang kurang jelas. Pada diskusi kelompok terarah ini, jangan malu untuk mengemukakan pendapat. Anda diminta untuk berbicara dengan suara yang lantang. Suasana diskusi akan berlangsung lancar apabila kita semua menghormati orang yang sedang berbicara dan tidak menghakimi. Pendapat Anda dalam diskusi ini sangat berharga.

Asisten peneliti akan memberikan pertanyaan, merekam dan mencatat proses kegiatan diskusi ini.

Keikut sertaan Anda dalam diskusi ini adalah sangat kami hargai.

Hal-hal apa sajakan yang mungkin membuat Anda tidak nyaman apabila berpartisipasi dalam penelitian ini?

Selama diskusi, Anda mungkin tidak nyaman karena harus membagikan pengalaman yang kurang menyenangkan pada saat bencana. Namun, kami berharap Anda untuk tidak sungkan membagikan pengalaman dan pandangan tersebut.

Bagaimana nantinya ketidak-nyamanan tersebut diatasi?

Untuk menghindari rasa ***tidak enak hati***, Anda bisa saja untuk tidak menyebut langsung nama orang atau kantor. Untuk diketahui bahwa laporan penelitian ini tidak akan menyebutkan nama Anda maupun nama orang atau institusi yang Anda sebut.

Diharapkan Anda untuk tidak melanjutkan issue yang dibahas saat diskusi ataupun membagikan issue kepada orang lain setelah diskusi selesai.

Apabila Anda merasa ***tidak enak hati*** setelah diskusi ini, Anda diminta untuk menghubungi saya. Apabila dibutuhkan pelayanan medik lanjut, saya akan berusaha untuk merujuk Anda ke puskesmas terdekat.

Apa keuntungan keuntungan yang bisa saya dapatkan apabila terlibat pada penelitian ini?

Dengan terlibat pada penelitian ini, Anda akan mendapatkan pengalaman dan mengetahui lebih banyak tentang cara melakukan penelitian.

Penelitian ini adalah salah satu wadah dimana Anda bisa membagikan pengalaman Anda dan mengeluarkan pendapat Anda berkaitan dengan pemenuhan kesehatan ibu hamil pada saat bencana.

Keikut sertaan Anda akan sangan membantu negara kita pada saat penanganan bencana. Juga akan menolong ibu-ibu hamil yang lain yang terkena bencana di kemudian hari. Suara Anda dapat menyelamatkan nyawa orang di kemudian hari.

Bagaimana privasi saya dilindungi?

Semua kata yang akan Anda katakan selama diskusi akan dicatat. Namun, identitas Anda akan dilindungi dengan mengubah nama Anda di laporan akhir dan atau dokumen serupa yang terkait dengan penelitian ini.

Setelah Anda mengerti dan setuju untuk berpartisipasi, sebuah dokumen yang disebut **Formulir Persetujuan** akan diberikan kepada Anda agar Anda dapat membaca dan menandatanganinya. Kertas yang Anda tanda tangani akan disimpan di tempat yang aman dan rahasia. Kami akan membuatnya dalam versi elektronik dan membuat kode tertentu sehingga tidak ada orang lain yang bisa membukanya. Kertas asli yang ditandatangani dan versi elektronik akan disimpan di universitas kami di Selandia Baru.

Apa yang akan saya terima apabila berpartisipasi di penelitian ini?

Tidak akan ada biaya untuk berpartisipasi dalam penelitian ini. Makanan ringan akan disediakan saat sesi berlangsung.

Apabila Anda dating ke tempat ini dengan kendaraan umum, kami akan memberi Anda uang sebesar Rp.25.000 untuk mengganti tarif bus.

Berapa lama waktu yang dibutuhkan sebelum saya mengkonfirmasi keikutsertaan saya?

Anda akan diberi waktu dua minggu untuk mempertimbangkan keikutsertaan Anda pada penelitian ini. Selama dua minggu ini, jika Anda memiliki pertanyaan dan / atau sesuatu untuk diperjelas, jangan ragu untuk menghubungi saya melalui email, messenger Facebook, atau telepon.

Apa yang harus saya lakukan apabila saya ingin terlibat di penelitian ini?

Setelah Anda setuju untuk berpartisipasi dalam penelitian ini, kami akan meminta Anda menandatangani Formulir Persetujuan. Formulir ini menunjukkan bahwa Anda telah membaca dan memahami hak Anda dalam proyek penelitian ini termasuk masalah kerahasian anda dalam proses penelitian.

Setelah sesi selesai, sebaiknya ada hal hal yang kami ingin klarifikasi lebih lanjut maka kami akan menghubungi Anda. Kami akan mengontak Anda melalui telepon, Facebook 'japri', Skype dan / atau email].

Sebaliknya, jika Anda membutuhkan klarifikasi lebih lanjut setelah sesi selesai, Anda dapat menghubungi pihak Peneliti Utama.

Bisakah saya akan menerima hasil dari penelitian ini?

Ya, apabila anda berkehendak untuk mendapatkan informasi akhir dari penelitian ini, pada Formulir Persetujuan Anda dapat memilih opsi untuk menerima ringkasan temuan penelitian utama.

Apabila ada masalah berkaitan dengan penelitian ini, siapakah yang harus saya hubungi?

Apabila ada mendapat masalah berkaitan dengan penelitian ini, anda dapat menghubungi Pengawas: Professor Eleanor HOLROYD, eleanor.holroyd@aut.ac.nz, 0064 09 921 9999 ext 5298

Untuk masalah berkaitan dengan etikal isu dapat menghubungi Sekertaris Eksekutif dari Komisi Itik dari Auckland University of Technology [AUTEC], Kate O'Connor, ethics@aut.ac.nz , 921 9999 ext 6038.

Siapa yang saya hubungi untuk informasi lebih lanjut?

Detail kontak peneliti:

Stenly SAJOW, ssajow@gmail.com or stenly.sajow@aut.ac.nz

Disetujui oleh Komite Etik dari Auckland University of Technology Ethics Committee pada *17 Juli 2017*
Nomor Referensi dari AUTEC: *17/231*
Approved by the Auckland University of Technology Ethics Committee on 17 July 2017
AUTEC Reference number *17/231*.

Information Sheet

Focus Group Discussion

Date Information Sheet Produced

20 May 2017

Project Title

Responding to Maternal and Reproductive Health Needs of Pregnant Women during a Disaster in Indonesia

An Invitation

Mejuah juah! Selamat pagi.

My name is Stenly SAJOW. I am a PhD student from Auckland University of Technology in New Zealand.

I would like to invite you to participate in my research **on responding to maternal and reproductive health needs of pregnant women during a disaster in Indonesia**.

Your experienced of helping pregnant women who were accessing maternal and reproductive health services, particularly during the 2013 eruption of Mount Sinabung would help this team of researcher to understand what worked and how the said services for pregnant women could be improved in the future.

I am the main researcher of this project. Other members of the project are my supervisors: Professor Eleanor HOLROYD, Dr. Tineke WATER, and Dr. Melania HIDAYAT.

Your participation in this research is voluntary (your choice). You can choose to withdraw at any time prior to data collection.

What is the purpose of this research?

This research aims to find out how prepare our country, Indonesia, to provide health services to pregnant women during a disaster. It is hoped that your involvement in this research will produce a recommendation for better provision of maternal and reproductive health services, particularly to pregnant women, during a disaster response in Indonesia.

Why am I being invited to participate in this research?

You have been invited to participate in this research because your communities were affected by the 2013 eruption of Mount Sinabung.

What will happen in this research?

If you decide to take part in this research, you will be sitting in a group with other similar participants who were affected and/or involved in helping pregnant women during the 2013 eruption. Each group consists of about 12 people. Each session will last around 90 to 120 minutes.

Together with other participants, you will be discussing issues and answering questions. Please feel free to raise your hand and speak; or clarify any question if it is not quite clear; or refuse any question[s]. Please only one-voice-at- a-time. There is no right or wrong answer. Everybody has an equal chance to speak up. We value your voice.

My research assistant and I will be recording the process through taking note and tape recording.

Your active participation in the discussion is highly appreciated.

What are the discomforts and risks?

During discussion, we might discuss issues related to the maternal and reproductive health services that were provided during the emergency response. Should you experience unsatisfactory services or have complaints regarding the services, please do not hesitate to mention this.

How will these discomforts and risks be alleviated?

In order to not feel ***tidak enak hati***, you might not need to say directly the name of the person or institution but instead use a different name. Please be informed that your real identity will not appear in the report or similar papers related to this research.

It is hoped that you will not continue the conversation or bring up issues that we discuss in a group outside and/or after the session.

Should after the discussion you feel unwell, discomfort, or ***tidak enak hati***, please do not hesitate to contact me. I will try my best to listen and perhaps refer you to the nearest Puskesmas.

What are the benefits?

By taking part in this research you will have experience in participating in a research. You will have a chance to share your experience of helping pregnant women during the 2013 eruption, views about current maternal and reproductive health services, as well as expectations of how the services should be available in future disaster.

Your participation will help in developing a conceptual framework for integration that will benefit other Indonesian. It would benefit pregnant women who might be accessing maternal and reproductive health services during a disaster in a future. Your voices could help in saving future lives.

How will my privacy be protected?

All words that you are going to say during the discussion will be recorded. However, your identity will be protected by changing your name in the final report and or similar papers related to this research.

Once you understood and agreed to participate, a paper called **Consent Form** will be given to you for you to read and sign. Your signed paper will be kept in a safe and confidential place. We will be making it in an electronic version and creating a specific code so that no other person can open it. The original signed paper and the electronic version will be kept in our university in New Zealand.

What are the costs of participating in this research?

There will no cost to participate in this research. Refreshment will be provided to appreciate your time.

Only if you travel to this place by public transport, we will be giving you cash amounted of Rp.25,000 to substitute the bus fare.

What opportunity do I have to consider this invitation?

You will be given two weeks to decide whether you would like to take part in this study. During this time, should you have any question and/or something to clarify, please do not hesitate to contact me through email, Facebook messenger, or phone.

How do I agree to participate in this research?

Once you agreed to participate in this research, we will ask you to sign a Consent Form. This form shows that you have read and understood about your right in this research project and confidential issue during the research process.

After the session, should there will be further clarification, you will be contacted for further explanation [communication either by phone, Facebook messenger *'japri'*, Skype and/or email]. Vice versa, should you have/need further clarification, you are welcome to contact the primary researcher.

Will I receive feedback on the results of this research?

Yes, you will receive feedback as the results of this research. On the Consent Form you can chose to receive summary of key research findings.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Professor Eleanor HOLROYD, eleanor.holroyd@aut.ac.nz, 0064 09 921 9999 ext 5298

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, Kate O'Connor, ethics@aut.ac.nz , 921 9999 ext 6038.

Whom do I contact for further information about this research?

Researcher Contact Details:

Stenly SAJOW, ssajow@gmail.com or stenly.sajow@aut.ac.nz

Approved by the Auckland University of Technology Ethics Committee on 17 July 2017
AUTEC Reference number *17/231*.

Lembar Informasi

Diskusi Kelompok Terarah

Tanggal Lembar Informasi ini Dibuat

20 May 2017

Judul Penelitian

Pemenuhan kebutuhan kesehatan reproduksi ibu hamil pada saat bencana di Indonesia

Undangan

Mejuah juah! Selamat pagi.

Nama saya Stenly SAJOW. Saya adalah mahasiswa S3 di Auckland University of Technology di Selandia Baru.

Saya bermaksud untuk mengundang Anda untuk berpartisipasi di penelitian saya yang berkaitan dengan **masalah pemenuhan kesehatan reproduksi ibu hamil pada saat bencana di Indonesia**.

Pengalaman dan pandangan tentang bagaimana ibu hamil mendapatkan pelayanan kesehatan reproduksi, termasuk pada saat kejadian meletusnya gunung Sinabung di tahun 2013 akan sangat membantu saya.

Saya adalah peneliti utama. Pihak lain yang terlibat dalam penelitian ini adalah superviser saya: Professor Eleanor HOLROYD, Dr. Tineke WATER, dan Dr. Melania HIDAYAT.

Partisipasi Anda dalam penelitian ini adalah bersifat sukarela. Anda pun bisa mengundurkan diri kapan saja sebelum pengumpulan data.

Apakah tujuan penelitian ini?

Penelitian ini bertujuan untuk mengetahui seberapa siapkah Indonesia dalam penyediaan kesehatan reproduksi ibu hamil pada saat bencana.

Diharapkan bahwa penelitian ini, melalui partisipasi Anda, dapat menghasilkan kerangka rekomendasi untuk penanganan kesehatan ibu hamil yang lebih baik apabila terjadi kejadian bencana dikemudian hari.

Kenapa saya diundang untuk berpartisipasi dalam penelitian ini?

Anda diundang untuk berpartisipasi karena Anda, atau masyarakat anda terkena, atau organisasi anda terlibat secara langsung atau tidak langsung pada saat bencana gunung Sinabung meletus di tahun 2013.

Hal hal apa sajakah yang akan dilakukan kepada saya apabila setuju terlibat di penelitian ini?

Apabila Anda setuju untuk berpartisipasi, Anda akan duduk di diskusi kelopok bersama. Setiap kelompok terdiri dari maksimal 8 orang. Setiap sesi diskusi akan berlangsung sekitar 90 sampai 120 menit.

Bersama dengan peserta lainnya, Anda akan berdiskusi dan menjawab beberapa pertanyaan – pertanyaan. Jangan segan untuk mengungkapkan pendapat. Kami sangat berterima kaish apabila Anda menacungkan tangan sebelum diberi kesempatan untuk berbicara. Anda juga diberikan kebebasan untuk bertanya dan mengklarifikasi apabila ada pertanyaan atau hal hal yang kurang jelas. Pada diskusi kelompok terarah ini, jangan malu untuk mengemukakan pendapat. Anda diminta untuk berbicara dengan suara yang lantang. Suasana diskusi akan berlangsung lancar apabila kita semua menghormati orang yang sedang berbicara dan tidak menghakimi. Pendapat Anda dalam diskusi ini sangat berharga.

Bersama dengan asisten peneliti, kami akan merekam dan mencatat proses kegiatan diskusi ini.

Hal-hal apa sajakan yang mungkin membuat Anda tidak nyaman apabila berpartisipasi dalam penelitian ini?

Selama diskusi, Anda mungkin tidak nyaman karena harus membagikan pengalaman yang kurang menyenangkan pada saat bencana. Namun, kami berharap Anda untuk tidak sungkan membagikan pengalaman dan pandangan tersebut.

Bagaimana nantinya ketidak-nyamanan tersebut diatasi?

Untuk menghindari rasa ***tidak enak hati***, Anda bisa saja untuk tidak menyebut langsung nama orang atau kantor. Untuk diketahui bahwa laporan penelitian ini tidak akan menyebutkan nama Anda maupun nama orang atau institusi yang Anda sebut.

Diharapkan Anda untuk tidak melanjutkan issue yang dibahas saat diskusi ataupun membagikan issue kepada orang lain setelah diskusi selesai.

Apabila Anda merasa ***tidak enak hati*** setelah diskusi ini, Anda diminta untuk menghubungi saya. Apabila dibutuhkan pelayanan medik lanjut, saya akan berusaha untuk merujuk Anda ke puskesmas terdekat.

Apa keuntungan keuntungan yang bisa saya dapatkan apabila terlibat pada penelitian ini?

Dengan terlibat pada penelitian ini, Anda akan mendapatkan pengalaman dan mengetahui lebih banyak tentang cara melakukan penelitian.

Penelitian ini adalah salah satu wadah dimana Anda bisa membagikan pengalaman Anda dan mengeluarkan pendapat Anda berkaitan dengan pemenuhan kesehatan ibu hamil pada saat bencana.

Keikut sertaan Anda akan sangan membantu negara kita pada saat penanganan bencana. Juga akan menolong ibu-ibu hamil yang lain yang terkena bencana di kemudian hari. Suara Anda dapat menyelamatkan nyawa orang di kemudian hari.

Bagaimana privasi saya dilindungi?

Semua kata yang akan Anda katakan selama diskusi akan dicatat. Namun, identitas Anda akan dilindungi dengan mengubah nama Anda di laporan akhir dan atau dokumen serupa yang terkait dengan penelitian ini.

Setelah Anda mengerti dan setuju untuk berpartisipasi, sebuah dokumen yang disebut **Formulir Persetujuan** akan diberikan kepada Anda agar Anda dapat membaca dan menandatanganinya. Kertas yang Anda tanda tangani akan disimpan di tempat yang aman dan rahasia. Kami akan membuatnya dalam versi elektronik dan membuat kode tertentu sehingga tidak ada orang lain yang bisa membukanya. Kertas asli yang ditandatangani dan versi elektronik akan disimpan di universitas kami di Selandia Baru.

Apa yang akan saya terima apabila berpartisipasi di penelitian ini?

Tidak akan ada biaya untuk berpartisipasi dalam penelitian ini. Makanan ringan akan disediakan saat sesi berlangsung.

Apabila Anda dating ke tempat ini dengan kendaraan umum, kami akan memberi Anda uang sebesar Rp.25.000 untuk mengganti tarif bus.

Berapa lama waktu yang dibutuhkan sebelum saya mengkonfirmasi keikutsertaan saya?

Anda akan diberi waktu dua minggu untuk mempertimbangkan keikutsertaan Anda pada penelitian ini. Selama dua minggu ini, jika Anda memiliki pertanyaan dan / atau sesuatu untuk diperjelas, jangan ragu untuk menghubungi saya melalui email, messenger Facebook, atau telepon.

Apa yang harus saya lakukan apabila saya ingin terlibat di penelitian ini?

Setelah Anda setuju untuk berpartisipasi dalam penelitian ini, kami akan meminta Anda menandatangani Formulir Persetujuan. Formulir ini menunjukkan bahwa Anda telah membaca dan memahami hak Anda dalam proyek penelitian ini termasuk masalah kerahasian anda dalam proses penelitian.

Setelah sesi selesai, sebaiknya ada hal hal yang kami ingin klarifikasi lebih lanjut maka kami akan menghubungi Anda. Kami akan mengontak Anda melalui telepon, Facebook 'japri', Skype dan / atau email].

Sebaliknya, jika Anda membutuhkan klarifikasi lebih lanjut setelah sesi selesai, Anda dapat menghubungi pihak Peneliti Utama.

Bisakah saya akan menerima hasil dari penelitian ini?

Ya, apabila anda berkehendak untuk mendapatkan informasi akhir dari penelitian ini, pada Formulir Persetujuan Anda dapat memilih opsi untuk menerima ringkasan temuan penelitian utama.

Apabila ada masalah berkaitan dengan penelitian ini, siapakah yang harus saya hubungi?

Apabila ada mendapat masalah berkaitan dengan penelitian ini, anda dapat menghubungi Pengawas: Professor Eleanor HOLROYD, eleanor.holroyd@aut.ac.nz, 0064 09 921 9999 ext 5298

Untuk masalah berkaitan dengan etikal isu dapat menghubungi Sekertaris Eksekutif dari Komisi Itik dari Auckland University of Technology [AUTEC], Kate O'Connor, ethics@aut.ac.nz , 921 9999 ext 6038.

Siapa yang saya hubungi untuk informasi lebih lanjut?

Detail kontak peneliti:

Stenly SAJOW, ssajow@gmail.com or stenly.sajow@aut.ac.nz

Disetujui oleh Komite Etik dari Auckland University of Technology Ethics Committee pada *17 Juli 2017*
Nomor Referensi dari AUTEC: *17/231*

Information Sheet

Woman

Individual Interviews

Date Information Sheet Produced

20 May 2017

Project Title

Responding to Maternal and Reproductive Health Needs of Pregnant Women during a Disaster in Indonesia

An Invitation

Mejuah juah! Selamat pagi.

My name is Stenly SAJOW. I am a PhD student from Auckland University of Technology in New Zealand.

I would like to invite you to participate in my research **on responding to maternal and reproductive health needs of pregnant women during a disaster in Indonesia**.

Your experienced of being pregnant and how you assessed maternal and reproductive health services during the 2013 eruption of Mount Sinabung would help this team of researcher to understand what worked and how the maternal and reproductive health services for pregnant women could be improved in the future.

I am the main researcher of this project. Other members of the project are my supervisors: Professor Eleanor HOLROYD, Dr. Tineke WATER, and Dr. Melania HIDAYAT.

Your participation in this research is voluntary (your choice). You can choose to withdraw at any time prior to data collection.

What is the purpose of this research?

This research aims to find out how prepare our country, Indonesia, to provide maternal and reproductive health services to pregnant women during a disaster. It is hoped that your involvement in this research would produce a recommendation for better provision of maternal and reproductive health services, particularly to pregnant women, during a disaster response in Indonesia.

Why am I being invited to participate in this research?

You have been invited to participate in this research because you were pregnant during the 2013 eruption of Mount Sinabung.

What will happen in this research?

If you decide to take part of this research, a female research assistant will be asking you open-questions. Please feel free to speak; or clarify any question if it is not quite clear; or refuse any question[s]. There is no right and wrong answer. I really value your voice.

The interview will take around 60 to 90 minutes.

My research assistant and I will be recording the process through taking note and tape recorder.

Your active participation in the interview is highly appreciated.

What are the discomforts and risks?

During interview, I will be asking questions related to the maternal and reproductive health services that were provided during the emergency response. Should you experience unsatisfactory services or have complaints regarding the services, please do not hesitate to mention this.

How will these discomforts and risks be alleviated?

In order to not feel ***tidak enak hati***, you might not need to say directly the name of the person or institution but instead use a different name. Please be informed that your real identity will not appear in the report or similar papers related to this research.

It is hoped that after this interview you will not mention/share the questions that I will ask as well as your answers to other people.

Should after the discussion you feel unwell, discomfort, or ***tidak enak hati***, please do not hesitate to contact me. I will try my best to listen and perhaps refer you to the nearest Puskesmas.

What are the benefits?

By engaging in this research you will have experience in participating in a research. You will have a chance to share your experience when you were pregnant during the 2013 eruption, particularly the things that you encountered when accessing maternal and reproductive health services. Also your personal view about current and future services of the maternal and reproductive health particularly during a disaster response.

Your participation will help in developing a conceptual framework for integration that will benefit other Indonesians. Particularly, it would benefit other pregnant women who might be accessing maternal and reproductive health services during a disaster in a future. Your voices could help in saving future lives.

How will my privacy be protected?

All words that you are going to say during the interview will be recorded. However, your identity will be protected by **changing your name** in the final report and or similar papers related to this research.

Once you understood and agree to participate, a paper called **Consent Form** will be given to you for you to read and sign. Your signed paper will be kept in a safe and confidential place. We will be making it in an electronic version and creating a specific code so that no other person can open it. The original signed paper and the electronic version will be kept in our University in New Zealand.

What are the costs of participating in this research?

There will be no cost to participate in this research. Refreshment will be provided to appreciate your time.

Only if you travel to this place by public transport, then we will be giving you cash amounted of Rp.25,000 to substitute the bus fare.

What opportunity do I have to consider this invitation?

You will be given two weeks to decide whether you would like to take part in this study. During this period, should you have any question and/or something to clarify, please do not hesitate to contact me through email, Facebook messenger, or phone.

How do I agree to participate in this research?

Once you agreed to participate in this research, we will ask you to sign a Consent Form. This form shows that you have read and understood about your right in this research project and confidential issue during the research process.

After the session, should there will be further clarification, you will be contacted for further explanation [communication either by phone, Facebook messenger *'japri'*, Skype and/or email]. Vice versa, should you have/need further clarification, you are welcome to contact the primary researcher.

Will I receive feedback on the results of this research?

Yes, you will receive feedback as the results of this research. On the Consent Form you can chose to receive summary of key research findings.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Professor Eleanor HOLROYD, eleanor.holroyd@aut.ac.nz, 0064 09 921 9999 ext 5298

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC,

Kate O'Connor, ethics@aut.ac.nz , 921 9999 ext 6038.

Whom do I contact for further information about this research?

Researcher Contact Details:

Stenly SAJOW, ssajow@gmail.com or stenly.sajow@aut.ac.nz

Approved by the Auckland University of Technology Ethics Committee on 17 July 2017
AUTEC Reference number *17/231*.

Lembar Informasi

Wawancara Individu

Tanggal Lembar Informasi ini Dibuat

20 May 2017

Judul Penelitian

Pemenuhan kebutuhan kesehatan reproduksi ibu hamil pada saat bencana di Indonesia

Undangan

Mejuah juah! Selamat pagi.

Nama saya Stenly SAJOW. Saya adalah mahasiswa S3 di Auckland University of Technology di Selandia Baru.

Saya bermaksud untuk mengundang Anda untuk berpartisipasi di penelitian saya yang berkaitan dengan **masalah pemenuhan kesehatan reproduksi ibu hamil pada saat bencana di Indonesia**.

Pengalaman Anda saat hamil dan bagaimana Anda mendapatkan pelayanan kesehatan reproduksi pada saat kejadian meletusnya gunung Sinabung di tahun 2013 akan sangat membantu saya.

Saya sangat berterima kasih apabila Anda bisa membagikan pengalaman berkaitan dengan layanan kesehatan reproduksi apa sajakah yang disediakan untuk ibu hamil pada saat gunung Sinabung meletus; juga pendapat Anda mengenai layanan apa sajakah yang harus disediakan apabila terjadi bencana di kemudian hari.

Saya adalah peneliti utama. Pihak lain yang terlibat dalam penelitian ini adalah superviser saya: Professor Eleanor HOLROYD, Dr. Tineke WATER, dan Dr. Melania HIDAYAT.

Partisipasi Anda dalam penelitian ini adalah bersifat sukarela. Anda pun bisa mengundurkan diri kapan saja sebelum pengumpulan data.

Apakah tujuan penelitian ini?

Penelitian ini bertujuan untuk mengetahui seberapa siapkah negara kita, Indonesia, dalam penyediaan kesehatan reproduksi ibu hamil pada saat bencana.

Diharapkan bahwa penelitian ini, melalui partisipasi Anda, dapat menghasilkan kerangka rekomendasi untuk penanganan kesehatan ibu hamil yang lebih baik apabila terjadi kejadian bencana dikemudian hari.

Kenapa saya diundang untuk berpartisipasi dalam penelitian ini?

Anda diundang untuk berpartisipasi karena Anda hamil pada saat bencana gunung Sinabung meletus di tahun 2013.

Hal hal apa sajakah yang akan dilakukan kepada saya apabila setuju terlibat di penelitian ini?

Apabila Anda setuju untuk berpartisipasi, asisten peneliti saya akan menanyakan beberapa pertanyaan. Anda juga diberikan kebebasan untuk bertanya dan mengklarifikasi apabila ada pertanyaan atau hal hal yang kurang jelas. Jangan segan untuk mengungkapkan pendapat.

Wawancara ini akan berlangsung sekitar 60 sampai 90 menit.

Bersama dengan asisten peneliti, kami akan merekam dan mencatat proses kegiatan diskusi ini.

Keikut sertaan Anda dalam diskusi ini adalah sangat kami hargai.

Hal-hal apa sajakan yang mungkin membuat Anda tidak nyaman apabila berpartisipasi dalam penelitian ini?

Selama wawancara, Anda mungkin tidak nyaman karena harus membagikan pengalaman yang kurang menyenangkan pada saat bencana. Namun, kami berharap Anda untuk tidak sungkan membagikan pengalaman dan pandangan tersebut.

Bagaimana nantinya ketidak-nyamanan tersebut diatasi?

Untuk menghindari rasa ***tidak enak hati***, Anda bisa saja untuk tidak menyebut langsung nama orang atau kantor. Untuk diketahui bahwa laporan penelitian ini tidak akan menyebutkan nama Anda maupun nama orang atau institusi yang Anda sebut.

Diharapkan Anda untuk tidak melanjutkan issue yang dibahas saat diskusi ataupun membagikan issue kepada orang lain setelah wawancara selesai.

Apabila Anda merasa ***tidak enak hati*** setelah diskusi ini, Anda diminta untuk menghubungi saya. Apabila dibutuhkan pelayanan medik lanjut, saya akan berusaha untuk merujuk Anda ke puskesmas terdekat.

Apa keuntungan keuntungan yang bisa saya dapatkan apabila terlibat pada penelitian ini?

Dengan terlibat pada penelitian ini, Anda akan mendapatkan pengalaman dan mengetahui lebih banyak tentang cara melakukan penelitian.

Penelitian ini adalah salah satu wadah dimana Anda bisa membagikan pengalaman Anda dan mengeluarkan pendapat Anda berkaitan dengan pemenuhan kesehatan ibu hamil pada saat bencana.

Keikut sertaan Anda akan sangan membantu negara kita pada saat penanganan bencana. Juga akan menolong ibu-ibu hamil yang lain yang terkena bencana di kemudian hari. Suara Anda dapat menyelamatkan nyawa orang di kemudian hari.

Bagaimana privasi saya dilindungi?

Semua kata yang akan Anda katakan selama wawancara akan dicatat. Namun, identitas Anda akan dilindungi dengan mengubah nama Anda di laporan akhir dan atau dokumen serupa yang terkait dengan penelitian ini.

Setelah Anda mengerti dan setuju untuk berpartisipasi, sebuah dokumen yang disebut **Formulir Persetujuan** akan diberikan kepada Anda agar Anda dapat membaca dan menandatanganinya. Kertas yang Anda tanda tangani akan disimpan di tempat yang aman dan rahasia. Kami akan membuatnya dalam versi elektronik dan membuat kode tertentu sehingga tidak ada orang lain yang bisa membukanya. Kertas asli yang ditandatangani dan versi elektronik akan disimpan di universitas kami di Selandia Baru.

Apa yang akan saya terima apabila berpartisipasi di penelitian ini?

Tidak akan ada biaya untuk berpartisipasi dalam penelitian ini. Makanan ringan akan disediakan saat sesi berlangsung.

Apabila Anda dating ke tempat ini dengan kendaraan umum, kami akan memberi Anda uang sebesar Rp.25.000 untuk mengganti tarif bus.

Berapa lama waktu yang dibutuhkan sebelum saya mengkonfirmasi keikutsertaan saya?

Anda akan diberi waktu dua minggu untuk mempertimbangkan keikutsertaan Anda pada penelitian ini. Selama dua minggu ini, jika Anda memiliki pertanyaan dan / atau sesuatu untuk diperjelas, jangan ragu untuk menghubungi saya melalui email, messenger Facebook, atau telepon.

Apa yang harus saya lakukan apabila saya ingin terlibat di penelitian ini?

Setelah Anda setuju untuk berpartisipasi dalam penelitian ini, kami akan meminta Anda menandatangani Formulir Persetujuan. Formulir ini menunjukkan bahwa Anda telah membaca dan memahami hak Anda dalam proyek penelitian ini termasuk masalah kerahasian anda dalam proses penelitian.

Setelah sesi selesai, sebaiknya ada hal hal yang kami ingin klarifikasi lebih lanjut maka kami akan menghubungi Anda. Kami akan mengontak Anda melalui telepon, Facebook 'japri', Skype dan / atau email].

Sebaliknya, jika Anda membutuhkan klarifikasi lebih lanjut setelah sesi selesai, Anda dapat menghubungi pihak Peneliti Utama.

Bisakah saya akan menerima hasil dari penelitian ini?

Ya, apabila anda berkehendak untuk mendapatkan informasi akhir dari penelitian ini, pada Formulir Persetujuan Anda dapat memilih opsi untuk menerima ringkasan temuan penelitian utama.

Apabila ada masalah berkaitan dengan penelitian ini, siapakah yang harus saya hubungi?

Apabila ada mendapat masalah berkaitan dengan penelitian ini, anda dapat menghubungi Pengawas: Professor Eleanor HOLROYD, eleanor.holroyd@aut.ac.nz, 0064 09 921 9999 ext 5298

Untuk masalah berkaitan dengan etikal isu dapat menghubungi Sekertaris Eksekutif dari Komisi Itik dari Auckland University of Technology [AUTEC], Kate O'Connor, ethics@aut.ac.nz , 921 9999 ext 6038.

Siapa yang saya hubungi untuk informasi lebih lanjut?

Detail kontak peneliti:

Stenly SAJOW, ssajow@gmail.com or stenly.sajow@aut.ac.nz

Disetujui oleh Komite Etik dari Auckland University of Technology Ethics Committee pada *17 Juli 2017*
Nomor Referensi dari AUTEC: *17/231*

Information Sheet

Individual Interview

Date Information Sheet Produced

20 May 2017

Project Title

Responding to Maternal and Reproductive Health Needs of Pregnant Women during a Disaster in Indonesia

An Invitation

Mejuah juah! Selamat pagi.

My name is Stenly SAJOW. I am a PhD student from Auckland University of Technology in New Zealand.

I would like to invite you to participate in my research **on responding to maternal and reproductive health needs of pregnant women during a disaster in Indonesia**.

Your experienced of helping pregnant women who were accessing maternal and reproductive health services, particularly during the 2013 eruption of Mount Sinabung would help this team of researcher to understand what worked and how the said services for pregnant women could be improved in the future.

I am the main researcher of this project. Other members of the project are my supervisors: Professor Eleanor HOLROYD, Dr. Tineke WATER, and Dr. Melania HIDAYAT.

Your participation in this research is voluntary (your choice). You can choose to withdraw at any time prior to data collection.

What is the purpose of this research?

This research aims to find out how prepare our country, Indonesia, to provide health services to pregnant women during a disaster. It is hoped that your involvement in this research will produce a recommendation for better provision of maternal and reproductive health services, particularly to pregnant women, during a disaster response in Indonesia.

Why am I being invited to participate in this research?

You have been invited to participate in this research because your communities were affected by the 2013 eruption of Mount Sinabung.

What will happen in this research?

If you decide to take part in this research, a number of open-ended questions will be asked. Each session will last around 60 to 90 minutes.

We will be recording the process through taking note and tape recording.

Your active participation in the discussion is highly appreciated.

What are the discomforts and risks?

During interview, we might talk issues related to the maternal and reproductive health services that were provided during the emergency response. Should you experience unsatisfactory services or have complaints regarding the services, please do not hesitate to mention this.

How will these discomforts and risks be alleviated?

In order to not feel ***tidak enak hati***, you might not need to say directly the name of the person or institution but instead use a different name. Please be informed that your real identity will not appear in the report or similar papers related to this research.

It is hoped that you will not continue the conversation or bring up issues that we discuss in a group outside and/or after the session.

Should after the discussion you feel unwell, discomfort, or ***tidak enak hati***, please do not hesitate to contact me. I will try my best to listen and perhaps refer you to the nearest Puskesmas.

What are the benefits?

By taking part in this research you will have experience in participating in a research. You will have a chance to share your experience of helping pregnant women during the 2013 eruption, views about current maternal and reproductive health services, as well as expectations of how the services should be available in future disaster.

Your participation will help in developing a conceptual framework for integration that will benefit other Indonesian. It would benefit pregnant women who might be accessing maternal and reproductive health services during a disaster in a future. Your voices could help in saving future lives.

How will my privacy be protected?

All words that you are going to say during the discussion will be recorded. However, your identity will be protected by changing your name in the final report and or similar papers related to this research.

Once you understood and agreed to participate, a paper called **Consent Form** will be given to you for you to read and sign. Your signed paper will be kept in a safe and confidential place. We will be making it in an electronic version and creating a specific code so that no other person can open it. The original signed paper and the electronic version will be kept in our university in New Zealand.

What are the costs of participating in this research?

There will no cost to participate in this research. Refreshment will be provided to appreciate your time.

Only if you travel to this place by public transport, we will be giving you cash amounted of Rp.25,000 to substitute the bus fare.

What opportunity do I have to consider this invitation?

You will be given two weeks to decide whether you would like to take part in this study. During this time, should you have any question and/or something to clarify, please do not hesitate to contact me through email, Facebook messenger, or phone.

How do I agree to participate in this research?

Once you agreed to participate in this research, we will ask you to sign a Consent Form. This form shows that you have read and understood about your right in this research project and confidential issue during the research process.

After the session, should there will be further clarification, you will be contacted for further explanation [communication either by phone, Facebook messenger *'japri'*, Skype and/or email]. Vice versa, should you have/need further clarification, you are welcome to contact the primary researcher.

Will I receive feedback on the results of this research?

Yes, you will receive feedback as the results of this research. On the Consent Form you can chose to receive summary of key research findings.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Professor Eleanor HOLROYD, eleanor.holroyd@aut.ac.nz, 0064 09 921 9999 ext 5298

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, Kate O'Connor, ethics@aut.ac.nz , 921 9999 ext 6038.

Whom do I contact for further information about this research?

Researcher Contact Details:

Stenly SAJOW, ssajow@gmail.com or stenly.sajow@aut.ac.nz

Approved by the Auckland University of Technology Ethics Committee on 17 July 2017
AUTEC Reference number *17/231*.

Lembar Informasi
Wawancara Individu

Tanggal Lembar Informasi ini Dibuat

20 May 2017

Judul Penelitian

Pemenuhan kebutuhan kesehatan reproduksi ibu hamil pada saat bencana di Indonesia

Undangan

Mejuah juah! Selamat pagi.

Nama saya Stenly SAJOW. Saya adalah mahasiswa S3 di Auckland University of Technology di Selandia Baru.

Saya bermaksud untuk mengundang Anda untuk berpartisipasi di penelitian saya yang berkaitan dengan **masalah pemenuhan kesehatan reproduksi ibu hamil pada saat bencana di Indonesia**.

Pengalaman dan pandangan tentang bagaimana ibu hamil mendapatkan pelayanan kesehatan reproduksi, termasuk pada saat kejadian meletusnya gunung Sinabung di tahun 2013 akan sangat membantu saya.

Saya adalah peneliti utama. Pihak lain yang terlibat dalam penelitian ini adalah superviser saya: Professor Eleanor HOLROYD, Dr. Tineke WATER, dan Dr. Melania HIDAYAT.

Partisipasi Anda dalam penelitian ini adalah bersifat sukarela. Anda pun bisa mengundurkan diri kapan saja sebelum pengumpulan data.

Apakah tujuan penelitian ini?

Penelitian ini bertujuan untuk mengetahui seberapa siapkah Indonesia dalam penyediaan kesehatan reproduksi ibu hamil pada saat bencana.

Diharapkan bahwa penelitian ini, melalui partisipasi Anda, dapat menghasilkan kerangka rekomendasi untuk penanganan kesehatan ibu hamil yang lebih baik apabila terjadi kejadian bencana dikemudian hari.

Kenapa saya diundang untuk berpartisipasi dalam penelitian ini?

Anda diundang untuk berpartisipasi karena Anda, atau masyarakat anda terkena, atau organisasi anda terlibat secara langsung atau tidak langsung pada saat bencana gunung Sinabung meletus di tahun 2013.

Hal hal apa sajakah yang akan dilakukan kepada saya apabila setuju terlibat di penelitian ini?

Apabila Anda setuju untuk berpartisipasi, Anda akan ditanyai beberapa pertanyaan. Setiap sesi diskusi akan berlangsung sekitar 60 sampai 90 menit.

Kami akan merekam dan mencatat proses kegiatan diskusi ini.

Hal-hal apa sajakan yang mungkin membuat Anda tidak nyaman apabila berpartisipasi dalam penelitian ini?

Selama wawancara, Anda mungkin tidak nyaman karena harus membagikan pengalaman yang kurang menyenangkan pada saat bencana. Namun, kami berharap Anda untuk tidak sungkan membagikan pengalaman dan pandangan tersebut.

Bagaimana nantinya ketidak-nyamanan tersebut diatasi?

Untuk menghindari rasa ***tidak enak hati***, Anda bisa saja untuk tidak menyebut langsung nama orang atau kantor. Untuk diketahui bahwa laporan penelitian ini tidak akan menyebutkan nama Anda maupun nama orang atau institusi yang Anda sebut.

Diharapkan Anda untuk tidak melanjutkan issue yang dibahas saat diskusi ataupun membagikan issue kepada orang lain setelah diskusi selesai.

Apabila Anda merasa ***tidak enak hati*** setelah diskusi ini, Anda diminta untuk menghubungi saya. Apabila dibutuhkan pelayanan medik lanjut, saya akan berusaha untuk merujuk Anda ke puskesmas terdekat.

Apa keuntungan keuntungan yang bisa saya dapatkan apabila terlibat pada penelitian ini?

Dengan terlibat pada penelitian ini, Anda akan mendapatkan pengalaman dan mengetahui lebih banyak tentang cara melakukan penelitian.

Penelitian ini adalah salah satu wadah dimana Anda bisa membagikan pengalaman Anda dan mengeluarkan pendapat Anda berkaitan dengan pemenuhan kesehatan ibu hamil pada saat bencana.

Keikut sertaan Anda akan sangan membantu negara kita pada saat penanganan bencana. Juga akan menolong ibu-ibu hamil yang lain yang terkena bencana di kemudian hari. Suara Anda dapat menyelamatkan nyawa orang di kemudian hari.

Bagaimana privasi saya dilindungi?

Semua kata yang akan Anda katakan selama diskusi akan dicatat. Namun, identitas Anda akan dilindungi dengan mengubah nama Anda di laporan akhir dan atau dokumen serupa yang terkait dengan penelitian ini.

Setelah Anda mengerti dan setuju untuk berpartisipasi, sebuah dokumen yang disebut **Formulir Persetujuan** akan diberikan kepada Anda agar Anda dapat membaca dan menandatanganinya. Kertas yang Anda tanda tangani akan disimpan di tempat yang aman dan rahasia. Kami akan membuatnya dalam versi elektronik dan membuat kode tertentu sehingga tidak ada orang lain yang bisa membukanya. Kertas asli yang ditandatangani dan versi elektronik akan disimpan di universitas kami di Selandia Baru.

Apa yang akan saya terima apabila berpartisipasi di penelitian ini?

Tidak akan ada biaya untuk berpartisipasi dalam penelitian ini. Makanan ringan akan disediakan saat sesi berlangsung.

Apabila Anda dating ke tempat ini dengan kendaraan umum, kami akan memberi Anda uang sebesar Rp.25.000 untuk mengganti tarif bus.

Berapa lama waktu yang dibutuhkan sebelum saya mengkonfirmasi keikutsertaan saya?

Anda akan diberi waktu dua minggu untuk mempertimbangkan keikutsertaan Anda pada penelitian ini. Selama dua minggu ini, jika Anda memiliki pertanyaan dan / atau sesuatu untuk diperjelas, jangan ragu untuk menghubungi saya melalui email, messenger Facebook, atau telepon.

Apa yang harus saya lakukan apabila saya ingin terlibat di penelitian ini?

Setelah Anda setuju untuk berpartisipasi dalam penelitian ini, kami akan meminta Anda menandatangani Formulir Persetujuan. Formulir ini menunjukkan bahwa Anda telah membaca dan memahami hak Anda dalam proyek penelitian ini termasuk masalah kerahasian anda dalam proses penelitian.

Setelah sesi selesai, sebaiknya ada hal hal yang kami ingin klarifikasi lebih lanjut maka kami akan menghubungi Anda. Kami akan mengontak Anda melalui telepon, Facebook 'japri', Skype dan / atau email].

Sebaliknya, jika Anda membutuhkan klarifikasi lebih lanjut setelah sesi selesai, Anda dapat menghubungi pihak Peneliti Utama.

Bisakah saya akan menerima hasil dari penelitian ini?

Ya, apabila anda berkehendak untuk mendapatkan informasi akhir dari penelitian ini, pada Formulir Persetujuan Anda dapat memilih opsi untuk menerima ringkasan temuan penelitian utama.

Apabila ada masalah berkaitan dengan penelitian ini, siapakah yang harus saya hubungi?

Apabila ada mendapat masalah berkaitan dengan penelitian ini, anda dapat menghubungi Pengawas: Professor Eleanor HOLROYD, eleanor.holroyd@aut.ac.nz, 0064 09 921 9999 ext 5298

Untuk masalah berkaitan dengan etikal isu dapat menghubungi Sekertaris Eksekutif dari Komisi Itik dari

Auckland University of Technology [AUTEC], Kate O'Connor, ethics@aut.ac.nz , 921 9999 ext 6038.

Siapa yang saya hubungi untuk informasi lebih lanjut?

Detail kontak peneliti:

Stenly SAJOW, ssajow@gmail.com or stenly.sajow@aut.ac.nz

Disetujui oleh Komite Etik dari Auckland University of Technology Ethics Committee pada *17 Juli 2017*
Nomor Referensi dari AUTEC: *17/231*

Appendix N: Consent Forms

Woman

Focus Group Discussion

Project title: **Responding to Maternal and Reproductive Health Needs of Pregnant Women during a Disaster in Indonesia**

Project Supervisor: **Professor Eleanor HOLROYD (Primary supervisor),**
Dr. Tineke WATER (Secondary supervisor), and
Dr. Melania HIDAYAT (Field Supervisor)

Researcher: ***Stenly SAJOW***

- ○ I have read and understood the information provided about this research project in the Information Sheet dated …. / ……. / …….
- ○ I have had an opportunity to ask questions and to have them answered.
- ○ I understand that identity of my fellow participants and our discussions in the focus group is confidential to the group and I agree to keep this information confidential.
- ○ I understand that notes will be taken during the focus group and that it will also be audio-taped and transcribed.
- ○ I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- ○ I understand that if I withdraw from the study then, while it may not be possible to destroy all records of the focus group discussion of which I was part, I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- ○ I agree to take part in this research.
- ○ I wish to receive a summary of the research findings (please tick one): Yes○ No○

The interview will be conducted by an Indonesian female, however if you prefer to be interviewed by a male, please let us know.

Participant's signature: ……

Participant's name: ……

Participant's Contact Details (if appropriate): ……

Date:

Approved by the Auckland University of Technology Ethics Committee on 17 July 2017

AUTEC Reference number *17/231*.

Note: The Participant should retain a copy of this form.

Lembar Persetujuan

Perempuan

Kelompok Diskusi Terarah

Judul Penelitian: **Pemenuhan kebutuhan kesehatan reproduksi ibu hamil pada saat bencana di Indonesia**

Pengawas: **Professor Eleanor HOLROYD (Pengawas Pertama),**
Dr. Tineke WATER (Pengawas Kedua), dan
Dr. Melania HIDAYAT (Pengawas Lapangan)

Peneliti: ***Stenly SAJOW***

○ Saya telah membaca dan mengerti informasi tentang penelitian ini sesuai yang tercantum pada Lembar Informasi tertanggal …. / ……. / …….

○ Saya telah diberikan kesempatan untuk bertanya. Pertanyaan – pertanyaan saya telah terjawab.

○ Saya mengerti tentang pentingnya menjaga kerahasiaan identitas peserta lain dalan kelompok diskusi.

○ Saya mengerti bahwa proses diskusi akan di cacat, direkam dan di ketik.

○ Saya mengerti bahwa keikut sertaan saya dalam penelitian ini adalah sukarela dan saya juga dapat mengundurkan diri kapan saja.

○ Saya mengerti bahwa jika saya mengundurkan diri dalam penelitian ini maka informasi yang saya berikan dapat di hapus atau dapat juga di gunakan. Namun, saya tidak bisa menghapus informasi yang saya berikan apabila hasil dari temuan telah selesai dianalisa.

○ Saya setuju untuk berpartisipasi dalam penelitian ini.

○ Saya berkeinginan untuk menerima ringkasan dari temuan penelitian (silahkan pilih salah satu): Iya○ Tidak○

Diskusi akan di pandu oleh seorang wanita, namun jika anda lebih suka di pandu oleh seorang lelaki, tolong diberitahu.

Tanda tangan anda: ……

Nama anda: ……

Kontak yang bisa dihubungi: ……

Tanggal:

Disetujui oleh Komite Etik dari Auckland University of Technology Ethics Committee pada *17 Juli 2017*
Nomor Referensi dari AUTEC: *17/231*

Catatan: Anda akan menerima salinan dari Formulir ini. Anda diharapkan untuk menyimpannya.

Consent Form

Focus Group Discussion

Project title: **Responding to Maternal and Reproductive Health Needs of Pregnant Women during a Disaster in Indonesia**

Project Supervisor: **Professor Eleanor HOLROYD (Primary supervisor),**
Dr. Tineke WATER (Secondary supervisor), and
Dr. Melania HIDAYAT (Field Supervisor)

Researcher: ***Stenly SAJOW***

- ○ I have read and understood the information provided about this research project in the Information Sheet dated …. / ……. / …….
- ○ I have had an opportunity to ask questions and to have them answered.
- ○ I understand that identity of my fellow participants and our discussions in the focus group is confidential to the group and I agree to keep this information confidential.
- ○ I understand that notes will be taken during the focus group and that it will also be audio-taped and transcribed.
- ○ I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- ○ I understand that if I withdraw from the study then, while it may not be possible to destroy all records of the focus group discussion of which I was part, I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- ○ I agree to take part in this research.
- ○ I wish to receive a summary of the research findings (please tick one): Yes○ No○

Participant's signature: ……

Participant's name: ……

Participant's Contact Details (if appropriate):

……..

……..

Date:

Approved by the Auckland University of Technology Ethics Committee on 17 July 2017
AUTEC Reference number *17/231*.

Note: The Participant should retain a copy of this form.

Lembar Persetujuan

Kelompok Diskusi Terarah

Judul Penelitian: **Pemenuhan kebutuhan kesehatan reproduksi ibu hamil pada saat bencana di Indonesia**

Pengawas: **Professor Eleanor HOLROYD (Pengawas Pertama),**
Dr. Tineke WATER (Pengawas Kedua), dan
Dr. Melania HIDAYAT (Pengawas Lapangan)

Peneliti: ***Stenly SAJOW***

- ○ Saya telah membaca dan mengerti informasi tentang penelitian ini sesuai yang tercantum pada Lembar Informasi tertanggal …. / ……. / …….
- ○ Saya telah diberikan kesempatan untuk bertanya. Pertanyaan – pertanyaan saya telah terjawab.
- ○ Saya mengerti tentang pentingnya menjaga kerahasiaan identitas peserta lain dalan kelompok diskusi.
- ○ Saya mengerti bahwa proses diskusi akan di cacat, direkam dan di ketik.
- ○ Saya mengerti bahwa keikut sertaan saya dalam penelitian ini adalah sukarela dan saya juga dapat mengundurkan diri kapan saja.
- ○ Saya mengerti bahwa jika saya mengundurkan diri dalam penelitian ini maka informasi yang saya berikan dapat di hapus atau dapat juga di gunakan. Namun, saya tidak bisa menghapus informasi yang saya berikan apabila hasil dari temuan telah selesai dianalisa.
- ○ Saya setuju untuk berpartisipasi dalam penelitian ini.
- ○ Saya berkeinginan untuk menerima ringkasan dari temuan penelitian (silahkan pilih salah satu): Iya○ Tidak○

Tanda tangan anda: ……

Nama anda: ……

Kontak yang bisa dihubungi:

……..

……..

Tanggal:

Disetujui oleh Komite Etik dari Auckland University of Technology Ethics Committee pada *17 Juli 2017*
Nomor Referensi dari AUTEC: *17/231*

Catatan: Anda akan menerima salinan dari Formulir ini. Anda diharapkan untuk menyimpannya.

Consent Form

Woman

Individual Interview

Project title: **Responding to Maternal and Reproductive Health Needs of Pregnant Women during a Disaster in Indonesia**

Project Supervisor: **Professor Eleanor HOLROYD (Primary supervisor),**
Dr. Tineke WATER (Secondary supervisor), and
Dr. Melania HIDAYAT (Field Supervisor)

Researcher: ***Stenly SAJOW***

- ○ I have read and understood the information provided about this research project in the Information Sheet dated …. / ……. / …….
- ○ I have had an opportunity to ask questions and to have them answered.
- ○ I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.
- ○ I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- ○ I understand that if I withdraw from the study then I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.
- ○ I agree to take part in this research.
- ○ I wish to receive a summary of the research findings (please tick one): Yes○ No○

The interview will be conducted by an Indonesian female, however if you prefer to be interviewed by a male, please let us know.

Participant's signature / fingerprint: ……

Participant's name: ……

Participant's Contact Details (if appropriate): ……

Date:

Approved by the Auckland University of Technology Ethics Committee on 17 July 2017
AUTEC Reference number *17/231*.

Note: The Participant should retain a copy of this form.

Lembar Persetujuan

Perempuan

Wawancara Individu

Judul Penelitian: **Pemenuhan kebutuhan kesehatan reproduksi ibu hamil pada saat bencana di Indonesia**

Pengawas: **Professor Eleanor HOLROYD (Pengawas Pertama),**
Dr. Tineke WATER (Pengawas Kedua), dan
Dr. Melania HIDAYAT (Pengawas Lapangan)

Peneliti: ***Stenly SAJOW***

○ Saya telah membaca dan mengerti informasi tentang penelitian ini sesuai yang tercantum pada Lembar Informasi tertanggal …. / ……. / …….

○ Saya telah diberikan kesempatan untuk bertanya. Pertanyaan – pertanyaan saya telah terjawab.

○ Saya mengerti bahwa proses diskusi akan di cacat, direkam dan di ketik.

○ Saya mengerti bahwa keikut sertaan saya dalam penelitian ini adalah sukarela dan saya juga dapat mengundurkan diri kapan saja.

○ Saya mengerti bahwa jika saya mengundurkan diri dalam penelitian ini maka informasi yang saya berikan dapat di hapus atau dapat juga di gunakan. Namun, saya tidak bisa menghapus informasi yang saya berikan apabila hasil dari temuan telah selesai dianalisa.

○ Saya setuju untuk berpartisipasi dalam penelitian ini.

○ Saya berkeinginan untuk menerima ringkasan dari temuan penelitian (silahkan pilih salah satu):
Iya○ Tidak○

Diskusi akan di pandu oleh seorang wanita, namun jika anda lebih suka di pandu oleh seorang lelaki, tolong diberitahu.

Tanda tangan anda: ……

Nama anda: ……

Kontak yang bisa dihubungi:

……..

Tanggal:

Disetujui oleh Komite Etik dari Auckland University of Technology Ethics Committee pada *17 Juli 2017*
Nomor Referensi dari AUTEC: *17/231*

Catatan: Anda akan menerima salinan dari Formulir ini. Anda diharapkan untuk menyimpannya.

Consent Form

Individual Interview

Project title: **Responding to Maternal and Reproductive Health Needs of Pregnant Women during a Disaster in Indonesia**

Project Supervisor: **Professor Eleanor HOLROYD (Primary supervisor),**
Dr. Tineke WATER (Secondary supervisor), and
Dr. Melania HIDAYAT (Field Supervisor)

Researcher: ***Stenly SAJOW***

○ I have read and understood the information provided about this research project in the Information Sheet dated …. / ……. / …….

○ I have had an opportunity to ask questions and to have them answered.

○ I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.

○ I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.

○ I understand that if I withdraw from the study then I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, once the findings have been produced, removal of my data may not be possible.

○ I agree to take part in this research.

○ I wish to receive a summary of the research findings (please tick one): Yes○ No○

Participant's signature / fingerprint:
.....

Participant's name:
.....

Participant's Contact Details (if appropriate):

……..

……..

Date:

Approved by the Auckland University of Technology Ethics Committee on 17 July 2017
AUTEC Reference number *17/231*.

Note: The Participant should retain a copy of this form.

Lembar Persetujuan

Kelompok Diskusi Terarah

Judul Penelitian: **Pemenuhan kebutuhan kesehatan reproduksi ibu hamil pada saat bencana di Indonesia**

Pengawas: **Professor Eleanor HOLROYD (Pengawas Pertama),**
Dr. Tineke WATER (Pengawas Kedua), dan
Dr. Melania HIDAYAT (Pengawas Lapangan)

Peneliti: ***Stenly SAJOW***

○ Saya telah membaca dan mengerti informasi tentang penelitian ini sesuai yang tercantum pada Lembar Informasi tertanggal …. / ……. / …….

○ Saya telah diberikan kesempatan untuk bertanya. Pertanyaan – pertanyaan saya telah terjawab.

○ Saya mengerti tentang pentingnya menjaga kerahasiaan identitas peserta lain dalan kelompok diskusi.

○ Saya mengerti bahwa proses diskusi akan di cacat, direkam dan di ketik.

○ Saya mengerti bahwa keikut sertaan saya dalam penelitian ini adalah sukarela dan saya juga dapat mengundurkan diri kapan saja.

○ Saya mengerti bahwa jika saya mengundurkan diri dalam penelitian ini maka informasi yang saya berikan dapat di hapus atau dapat juga di gunakan. Namun, saya tidak bisa menghapus informasi yang saya berikan apabila hasil dari temuan telah selesai dianalisa.

○ Saya setuju untuk berpartisipasi dalam penelitian ini.

○ Saya berkeinginan untuk menerima ringkasan dari temuan penelitian (silahkan pilih salah satu): Iya○ Tidak○

Tanda tangan anda: .....

Nama anda: .....

Kontak yang bisa dihubungi: …….

Tanggal:

Disetujui oleh Komite Etik dari Auckland University of Technology Ethics Committee pada *17 Juli 2017*
Nomor Referensi dari AUTEC: *17/231*

Catatan: Anda akan menerima salinan dari Formulir ini. Anda diharapkan untuk menyimpannya.

Appendix O: Demographic Sheet

Woman Participant

Age range:		Less than 18 years old		Between 25 – 49 years old
		Between 18 – 24 years old		More than 50 years old
What was the highest school/education you have been to?		None		Undergraduate
		Primary School		Postgraduate
		Intermediate School		Other:- *Madrazah [religious school] or:*
		Secondary School		- ……..
What is your daily job?				
Your history related to pregnancy and delivery 1. Are you currently pregnant? ….. Yes ….. No *If yes:* 2. How many month[s] now? …. months 3. How many times have you been seeing a health personnel? ……	**A. BEFORE the December 2013 eruption**			
	• Number of previous pregnancies			
	• Number of previous deliveries			
	• Number of death or loss of a baby before or during delivery			
	• Number of children			
	B. AFTER the December 2013 eruption			
	• Number of previous pregnancies			
	• Number of previous deliveries			
	• Number of death or loss of a baby before or during delivery			
	• Number of children			
What is your ethnicity?		Karo		Java
		Batak		Others:
What is your religion		Muslim		Buddhist
		Protestant		Hindu
		Catholic		Others: ……
What is your marital status?		Single		Unmarried
		Married		Divorced
How long have you been living in this village / temporary shelter?	……. months			
What is your current place of residence		House		Temporary Shelter
In average, how much your entire family earn on monthly basis? **; The 2017 Government of Indonesia's Minimum Wage – for North Sumatera Province*		No income		
		Less than Rp.1,961,354*		
		More than Rp.1,961,354*		

- **Please feel free to ask question, clarify, and/or not to answer;**
- **Let us know if you would like us to read and guide you while filling this paper;**

Thank you very much for participating in this research.

Lembar Isian Data Demografi

Peserta Perempuan

Rentang Usia:		Kurang dari 18 tahun		Diantara 25 – 49 tahun
		Diantara 19 – 24 tahun		Diatas 50 tahun
Pendidikan terakhir		Tidak sekolah		Perguruan Tinggi - S1
		Sekolah Dasar		Perguruan tinggu S2 / S3
		Sekolah Menengah Petama		Lainnya: *- Madrazah [/ Sekolah Agama* - ……..
		Sekolah Menengah Atas		
Apa pekerjaan sehari-hari Anda?				
Riwayat Kehamilan dan Persalinan 1. Apakah Anda sedang hamil? ….. Iya ….. Tidak *Kalau iya:* 1. Berapa usia kehamilan sekarang? …. bulan 2. Sudah berapa kali anda control ke tenaga kesehatan? ……		**A. SEBELUM gunung meletus pada Desember 2013**		
		• Jumlah kehamilan sebelumnya		
		• Jumlah kelahiran sebelumnya		
		• Jumlah lahir mati		
		• Jumlah anak		
		B. SETELAH gunung meletus pada Desember 2013		
		• Jumlah kehamilan sebelumnya		
		• Jumlah kelahiran sebelumnya		
		• Jumlah lahir mati		
		• Jumlah anak		
Apakah suku Anda?		Karo		Jawa
		Batak		Lainnya:
Apakah agama Anda?		Muslim		Buddha
		Protestant		Hindu
		Katolik		Lainnya: ……
Apakah status perkawinan sekarang?		Belum nikah		Tidak menikah
		Nikah		Cerai
Sudah berapa lamakah Anda tinggal di desa / tempat penampungan sementara?		…… …… bulan		
Apa tempat tinggal Anda sekarang		Rumah		Tempat penampungan sementara
Rata-rata, berapa penghasilan keluarga Anda perbulan? **; Upah Minimum – berdasarkan Pemerintah Indonesia untuk Propinsi Sumatera Utara tahun 2017*		Tidak ada penghasilan		
		Kurang dari Rp.1,961,354*		
		Diatas Rp.1,961,354*		

- **Mohon mengajukan pertanyaan, mengklarifikasi, dan/atau tidak menjawab pertanyaan diatas;**
- **Beri tahu kami apabila Anda ingin kami membacakan lembaran ini and/atau membimbing Anda saat mengisi lembaran ini;**

Terima kasih banyak telah berpartisipasi dalam penelitian ini.

Demographic Sheet

Health Personnel Participant

Age range:		Less than 18 years old		Between 25 – 49 years old
		Between 18 – 24 years old		More than 50 years old
Sex		Male		Female
As a health personnel, please specify your role		Midwife		Laboratory assistant
		Nurse		Pharmacist
		Medical Doctor		Other:
		Obstetrician		…….
In which level of health facility do you currently work?		Village Health Post / Puskesmas Pembantu		Tertiary Health Care
		Puskesmas / Primary Health Care		Other:
		Secondary Health Care		
How long have you been in this function?	…… months			
When did you start your work here in Sinabung? Month: …… / Year: …….				
Have you ever been attending any course related to maternal and reproductive health in a disaster? **(Yes/No)** If yes, when? : Month: …… / Year: ……. Do you remember which organisation[s] organised the training[s]? ……				
What is your ethnicity?		Karo		Java
		Batak		Others:
What is your religion		Muslim		Buddhist
		Protestant		Hindu
		Catholic		Others: ……
Do you live here in Sinabung OR outside this area? (Yes / No) If yes: How long have you been living in this village / temporary shelter? ……. months				

- **Please feel free to ask question, clarify, and/or not to answer;**
- **Let us know if you would like us to read and guide you while filling this paper;**

Thank you very much for participating in this research.

Lembar Isian Data Demografi

Peserta dari Petugas Kesehatan

Rentang Usia:		Kurang dari 18 tahun		Diantara 25 – 49 tahun
		Diantara 19 – 24 tahun		Diatas 50 tahun
Jenis Kelamin		Pria		Wanita
Peran anda sebagai petugas kesehatan adalah		Bidan		Asisten laboratorium
		Perawat		Apoteker
		Dokter Umum		Lainnya:
		Dokter ahli kebidanan		……
Ditingkat fasilitas kesehatan manakah Anda saat ini bekerja?		Puskesmas Pembantu		Rumah Sakit Propinsi
		Puskesmas		Lainnya:
		Rumah Sakit Kabupaten		
Sudah berapa lama anda menjabat jabatan tersebut diatas?	…… bulan			
Kapan Anda memulai pekerjaan ini di Sinabung? Bulan: …… / Tahun: ……				
Pernakah Anda mengikuti kursus yang berkaitan dengan penanganan kesehatan ibu hamil pada saat bencana? **(Iya/Tidak)** Bila iya, kapan?: Bulan …… Tahun: …… Apakah nama instotusi yang memberikan pelatihan / kursus tersebut? ……				
Apakah suku Anda?		Karo		Jawa
		Batak		Lainnya:
Apakah agama Anda?		Muslim		Buddha
		Protestant		Hindu
		Katolik		Lainnya: ……
Apakah anda tinggal di Sinabung? (Iya / Tidak) Bila Iya: Sudah berapa lamakah Anda tinggal di desa / tempat penampungan sementara? …… bulan				

- **Mohon mengajukan pertanyaan, mengklarifikasi, dan/atau tidak menjawab pertanyaan diatas;**
- **Beri tahu kami apabila Anda ingin kami membacakan lembaran ini and/atau membimbing Anda saat mengisi lembaran ini;**

Terima kasih banyak telah berpartisipasi dalam penelitian ini.

Demographic Sheet

Policymaker Participant – in Karo Sinabung

Age range		Less than 18 years old		Between 25 – 49 years old
		Between 18 – 24 years old		More than 50 years old
Sex		Male		Female
What is your current function?		Village leader		Members of PKK / Women's Group
		Temporary shelter leader		Other:
		Religious leader		.....
How long have you been in this function?	..... months			
Have you ever been attending any course related to maternal and reproductive health in a disaster? **(Yes/No)** If yes, when? : Month: ..... / Year: ..... Do you remember which organisation[s] organised the training[s]?				
What is your ethnicity?		Karo		Java
		Batak		Others: .....
What is your religion		Muslim		Buddhist
		Protestant		Hindu
		Catholic		Others: .....
Do you live here in Sinabung OR outside this area? (Yes / No) If yes: How long have you been living in this village / temporary shelter? ..... Months / ..... Years				

- **Please feel free to ask question, clarify, and/or not to answer;**
- **Let us know if you would like us to read and guide you while filling this paper;**

Thank you very much for participating in this research.

Lembar Isian Data Demografi

Peserta dari Pihak Pemangku Kepentingan –

Domisili di Karo Sinabung

Rentang Usia:		Kurang dari 18 tahun		Diantara 25 – 49 tahun
		Diantara 19 – 24 tahun		Diatas 50 tahun
Jenis Kelamin		Pria		Wanita
Apakah jabatan Anda saat ini?		Kepala Desa		Anggota PKK
		Kepala Tempat Penampungan Sementara		Lainnya:
		Pemimpin Agama		……
Sudah berapa lama anda menjabat jabatan tersebut diatas?		…… bulan		
Pernakah Anda mengikuti kursus yang berkaitan dengan penanganan kesehatan ibu hamil pada saat bencana? **(Iya/Tidak)** Bila iya, kapan?: Bulan …….. Tahun: …….. Apakah nama instotusi yang memberikan pelatihan / kursus tersebut? ……				
Apakah suku Anda?		Karo		Jawa
		Batak		Lainnya:
Apakah agama Anda?		Muslim		Buddha
		Protestant		Hindu
		Katolik		Lainnya: ……
Apakah anda tinggal di Sinabung? (Iya / Tidak) Bila Iya: Sudah berapa lamakah Anda tinggal di desa / tempat penampungan sementara? ……. bulan				

- **Mohon mengajukan pertanyaan, mengklarifikasi, dan/atau tidak menjawab pertanyaan diatas;**
- **Beri tahu kami apabila Anda ingin kami membacakan lembaran ini and/atau membimbing Anda saat mengisi lembaran ini;**

Terima kasih banyak telah berpartisipasi dalam penelitian ini.

Demographic Sheet

Policymaker Participant – in Medan and Jakarta

Age range		Less than 18 years old		Between 25 – 49 years old
		Between 18 – 24 years old		More than 50 years old
Sex		Male		Female
What is your current title?	…….			
How long have you been in this function?	…… months			
What is the best to describe your position level?		Executive level		
		Operational level		
		Administrative level		
What is best to describe your current organisation?		Government Agency		
		Non-Government Organisation		
		Other: ……		

Have you ever been attending any course related to maternal and reproductive health in a disaster? **(Yes/No)**

If yes, when? : Month: …… / Year: ……

Do you remember which organisation[s] organised the training[s]?

……

What is your citizenship?		Indonesian		
		Foreigner		
If you are Indonesia, what is your ethnicity?		Karo		Java
		Batak		Others: ……

- **Please feel free to ask question, clarify, and/or not to answer;**
- **Let us know if you would like us to read and guide you while filling this paper;**

Thank you very much for participating in this research.

Lembar Isian Data Demografi

Peserta dari Pihak Pemangku Kepentingan –

di Medan and Jakarta

Rentang Usia:		Kurang dari 18 tahun		Diantara 25 – 49 tahun
		Diantara 19 – 24 tahun		Diatas 50 tahun
Jenis Kelamin		Pria		Wanita
Apakah jabatan anda saat ini?	…….			
Berapa lama anda menduduki jabatan ini?	…… months			
Apa tingkatan dari posisi jabatan anda sekarang?		Tingkat eksekutif		
		Tingkat operasional		
		Tingkat administrasi		
Organisasi Anda adalah		Bagian dari Pemerintah		
		Bukan Pemerintah [i.e.: NGO, ASEAN, United Nations]		
		Lainnya: ……		

Pernakah Anda mengikuti kursus yang berkaitan dengan penanganan kesehatan ibu hamil pada saat bencana? **(Iya/Tidak)**

Bila iya, kapan?: Bulan …….. Tahun: ……..

Apakah nama instotusi yang memberikan pelatihan / kursus tersebut?

……

Apa kewarganegaraan Anda?		Orang Indonesia		
		Orang Asing		
Apabila Anda orang Indonesia, dari suku manakah Anda?		Karo		Jawa
		Batak		Lainnya: ……..

- **Mohon mengajukan pertanyaan, mengklarifikasi, dan/atau tidak menjawab pertanyaan diatas;**
- **Beri tahu kami apabila Anda ingin kami membacakan lembaran ini and/atau membimbing Anda saat mengisi lembaran ini;**

Terima kasih banyak telah berpartisipasi dalam penelitian ini.

Appendix P: Example – Transcription [Original version]

Wawancara Individu

RAHASIA / CONFIDENTIAL

Code:	Woman	II	Village 1

Hari / Tanggal: Minggu, 07 January 2018

RESEARCHER
Selamat malam Ibu. Terima kasih banyak atas waktunya, tadi malam datang ngumpul dan sekarang juga mau bersedia di wawancarai.

Dari penjelasan tadi tentang tujuan penelitian, apa Ibu ada pertanyaan?

LAKSMITA
Ga ada. Sudah jelas

RESEARCHER
Ia... baik ....terima kasih banyak bu....

Tadi malam waktu kita diskusi kelompok, Ibu sempat bilang kalau pada waktu 2013 itu kan ibu hamil 4 bulan, sedangkan pada waktu 2010 itu ibu hamil besar dan sudah mau melahirkan. Bisakah Ibu berikan pengalaman waktu melahirkan di 2010 dan di bandingkan dengan pengalaman ibu melahirkan 2013?

LAKSMITA
Pengalaman 2013 dan 2010 ya…. Saya berterima kasih banyak waktu kejadian tahun 2013 itu, semuanya diberikan gratis. Pemerintahnya sudah membaik penanganannya tahun 2013 dibanding 2010… Termasuk layanan kesehatannya itu dulu gratis, jadi bersyukur sekali karena pelayanan yang diberiakan dulu tanpa di pungut biaya waktu tahun 2013 itu, nah kalau kejadian tahun 2010, saya harus bayar semuanya, ga gratis, termasuk waktu ngelahirin anak pertama saya. Pengalaman saya pada 2010 kemaren ...kami belum ada persiapan... persiapan apa-pun belum ada ...namanya kami bertani ,modal semua ,masuk ke..... usaha kebertani e-em untuk persiapan melahirkan di tunggu hasil dari bertani baru e-e untuk biaya persalinan, sementara..... tanaman yang di di-tunggu masih... sebelum itu udah di timpa e-em bencana itu duluan....

Kalau 2013 memang di perhatikan yang lahiran 2013 itu ....ada penyandang dana-lah gitu, gratis, di situ kemaren udah di kasih persiapan-persiapan untuk bayi.... udah di periksa, e-em udah di kasih obat-obatan ,vitamin, khusus untuk e-e ibu melahirkan.

Kalau 2010 dulu belum ada itu ....dari biaya kita , kita sendiri lah gitu ....sementara ini pengungsian 2010 kemaren kami kesana kemari gitu... entah kemana –mana gitu ,kami ...di over –over gitu, tapi kalau 2013 memang sama-sekali ,engak bayar sama sekali… jadi untuk kami yang ibu hamil sama ibu melahirkan kemaren itu diperhatikan e-em

RESEARCHER
Bisa Ibu ceritakan pengalaman waktu ke layanan kesehatan di tahun 2013?

LAKSMITA

Kalau kami dulu.... yang 2013, ada petugasnya di UKA. Kalau bidannya baik namanya kami pengungsi gitu di utamakan,

Waktu di pengungsian, saya lihat tim kesehatan hanya datang ketempat kami 2 kali….. waktu mereka datang, banyak orang yang berkerumun… tapi saya engak bisa periksa hamil, yang antri banyak.. terus obat obatannya juga terbatas… kata mereka yang di klinik mereka kehabisan obat, masih tunggu obat karena masih di pesan lagi… jadi kita biasanya datang tapi ga usah datang dengan keinginan yang tinggi tinggi, yang penting perutnya dipegang aja sama ibu bidan dan waktu ibu bidan keadaan bayi dan saya sehat, itu aja sudah senang. Maklum kan di pengungsian… *[senyum]…*

RESEARCHER
Apakah ibu puas dengan fasilitas yang di---yang ada di klinik waktu di pengungsian?

LAKSMITA
Ya.. gimana ya… puas lah .. [senyum]… ga sempurna sempurna amat tapi bolehlah… meskipun ga ada pintu cuma ditutup kian gorden, jadi serba minim, tapi paling tidak ada tempat yang bisa didatangi kalau sakit atau mau periksa hamil… dari pada tidak sama sekali…

Posko ya.... kurang lah , cuman tensi, obat-obatan... gitu aja kurang ,ia ...sama tengok nya detak jantung bayi ,.gitu aja eem ,tapi pernah juga kemaren dari dinas kesehatan entah ....entah dari mana, engak tau datang ia, untuk komputer kami gitu... USG ..ia ....itu ada kemarin… tapi setelah itu alatnya ga ada lagi, dibawa balik.. jadi setelahnya, klinik kami jadi kurang lagi alatnya… serba minim… tapi banyak orang yang anti…

Makanya kalau sudah dipanggil ke dalam dan ketemu ibu bidan, rasanya lebih tenang aja… soalnya antriannya panjang… meskipun, kalau kita datang ya di periksa ....apa keluhan kita cuman itu aja...nanya –nanya aja. Ga bisa diperiksa buka baju, soalnya Cuma pake tutup kain gorden aja. Nanti kalau ditempa angin bisa maul dilihat orang. Terus yang antri disitu kan bukan Cuma Ibu hamil, tapi semua orang dating… ya Ibu bidan melayani semua orang doi posko…

RESEARCHER
Kira-kira.....berapa lama menunggu antriannya bu ...waktu di penggungsian?

LAKSMITA
Antriannya lama… yang datang pun ..cuman ..orang –orang tua gitu... e-em pilek, entah karena kena debu itu kan , debu vulkanik itu ...jadi minta dia ....entah tetes mata... cuman –cuman gitu aja .....antriannya panjang, kadang sudah anti pingin pipis jadi keluar terus balik lagi.. ehhh mulai nomor awal [ketawa]… maklum orang kit kan ga tahu antri.. juga biarpun kita hamil atau orang tua yang lain ga mau mengalah...

RESEARCHER
Nah.... gimana ibuu melihat kinerja ibu bidan, puas ga?

LAKSMITA
Bi--bidannya itu pun baik… Cuma kerjaan nya banyak banget… Bidannya itu tinggal degan kita di pengungsian… jadi sudah tahu kita gimana perangainya… Dia berusaha melayani tapi kasihan juga kebanyakan pasien, alat kurang, obat habis, jadi dia juga capek dan pusing kali… [tertawa]… kalau ingat masa masa itu, kadang kita kasihan juga lihat ibu bidan dan petugas lainnya… udah kerja keras, kadang masih juga dimarahin sama pasien pasien… ada yang permintaannya macam macam… mau ini mauy itu, cari obat ini obat itu… saya dengarnya juga pusing… kadang saya dengar orang lain juga negur pasien lain bilang kalau ini di pengungsian, kalau mau yang kelas kelas tinggi pigi kamu ke rumah sakit mewah di Medan… jadi gimana ya… kasiahn aku sama bidan bidan itu.

Cuma kalau mau jujur, kan bidannya kadang ganti dengan yang dari tempat lain… yang bidan pendatang juga kadang suka kasar.. ga mau tahu… ga suka dengar keluhan kita.. pas masuk udah di kasi obat… ga senyum… saya tahu mereka capek juga tapi kadang saya suka tanya, mereka bidah bidan ini siap ga kerja di lapangan…. Kayak ga siap….
Jadi saya suka bilang, ya Allah, kuatkan hambamu ini… sudah kena erupsi juga kena marah sama ibu bidan… hemmm…. Tapi itulah dulu… kenangan… makanya sekarang bersyukur aja…

RESEARCHER
Nah e-em ,masalah –masalah obat-obatan yang di berikan oleh bidan atau tenaga kesehatan e-em apakah ibu puas kalau obat –obatan waktu di peng---posko penggungsian

LAKSMITA
Ya , namanya kita di gratiskan kan--puas lah.. meski sangat terbatas obat obat yang diberikan…

Kalau kita mau minta obat lebih dari itu, kan .... kita harus pakai biaya sendiri… artinya harus beli di luar di apotik…

RESEARCHER
Ee Kemudian tentang –tentang KB juga ,obat-obatan nya gimaana Ibu?

LAKSMITA
Kalau masalah KB nya itu aku..... ...engak terlalu tahu. Soalnya kemarin itu pas melahirkan di rumah sakit tahun 2013 lalu langsung di steril. Takut nya nanti hamil lagi gitu ....karena belum pasti kemaren kami pindah kemari gitu ....belum tau tempat tinggal yang pasti nanti ya .eem ..dari pada ngurus itu –itu aja nanti kan mendingan udah lah dari pada ini kan mendingan steril kan aja gitu .eem .... kalau ber-KB anak ku semua jarak- jarak 3 tahun lewat memang ber KB rajin aku ber KB e-em ...tapi--.namanya tinggal di kampung kan pak. E-em .. pas panen baru ada uang.... kalau engak panen engak ada uang gitu.

RESEARCHER
Baik ibu…. Nah ibu kan ,waktu 2013 e-em dengan si rimna itu hamil 4 bulan ia nah e-em di posko berapa kali ibu e-em periksa ke bidan ....kar -periksa kandungan

LAKSMITA
Kalau di posko ....untuk periksa hamil saya Cuma dua kali… soalnya aku ....segan gitu, karena rame orang kan ....dipegang –pegang perut gitu ....malu kurasa ...ee orang kemana pun masuk ....namanya juga penggungsian ....rame… orangnya bercampur semua di situ

RESEARCHER
Jadi apa yang ibu lakukan?

LAKSMITA
Saya akhirnya pergi ke Puskesmas lain .... gitu puskesmas lain, biar puas, ada kamar periksanya… dapat obat, diperiksa yang benar… ga malu juga. JUga kalau di puskesmas kan bisa kita santai gini gini.... bisa ngomong enak… bidannya ga terburu buru.

RESEARCHER
Nah e-em Ibu, waktu penggungsian yang waktu dulu bu .... ada tidak pegang yang .... buku yang merah muda

LAKSMITA
Buku immunisasi , ia ada. Tapi itu dapatnya dari Puskesmas. Kalau di klinik di penggungsian kurasa engak.... engak ada ...disana serba minim. Cuman dari puskesmas yang dari tempat kami immunisasi lah gitu, di kasih buku immunisasi itu.

RESEARCHER
Tapi ibu penggang terus itu, ibu simpan?

LAKSMITA
Kalau sekarang ekch eckh harus dicari-cari dulu lah pak

RESEARCHER
Engak.... Maksud-nya ibu berobat balik lagi ke Puskesmas apa bawa buku immunisasi itu?

LAKSMITA

Ia , itu –itu aja terus kami bawak . Soalnya buku itu ada catatan tentang imunisasi apa aja yang sudah diberikan ke bayi saya.

Kalau mau mengandalin yang di Puskesmas mungkin buku catatan mereka sudah ga ada.

Apa lagi di klinik di pengungsian, mereka kalau tulis itu pake kertas sembarang aja, mana bisa mereka catat riwayat imunisasi anak saya? Jadi harus dari saya yang punya catatannya… Di pengungsian, di klinik itu, apa karena suasananya darurat jadi mereka tulis itu ga di buku tapi di kertas hvs saja… terus habis nulis taruh di dus aqua.. udah gitu aja… nanti pas balik lagi, tanya lagi… jadi ga ada catatannya.. malah kalau sibuk ga pake di catat cata langsung kasih obat.. [ketawa]…

RESEARCHER
Jadi menurut ibu, buku imunisasi itu penting?

LAKSMITA
Ia. Biar bisa tahu apa saja yang sudah diberika immunisasi-immunisasinya. Nantinya bisa tahu, apa udah campak atau belum… terus buku itu harus disimpan, karena itu kan data-data kesehatan orang ini.....

Tapi ya itu, waktu di pengungsian, kayaknya ga ada dikasi buku itu. Makanya, saya ke Puskesmas saja.

RESEARCHER
Berapa lama ibu tinggal di penggungsian?

LAKSMITA
Ada sekitar ....8 entah 9 bulan, terus habis melahirkan kami nyewa di rumah disekitar pengungsian… soalnya kasihan anak kami.. masih bayi…. Takut kena sakit… soalnya di pengungsian banyak sekali orang… kamar kecilnya sedikit suka penuh, airnya kadang kurang… terus berisik kalau malam, jadi takut kalau saya dan anak saya jadi sakit…

Oh ya… air nya engak bagus ia terus sampah sampah disana –sini... kan engak cocok itu untuk bayinya…

Biasanya, ibu ibu yang punya anak kecil dan bayi itu kontrak rumah pas baru melahirkan, karena di pengungsian ga bersih… tapi kontraknya harus dekat dekat pengungsian biar bisa dating ke pengungsian untuk ambil jatah… misalnya beras, baju, telur, ikan, daging, dan bantuan bantuan lainnya dari pemerintah, juga NGOs, dan dari Medan, Jakarta dan tempat tempat lainnya.

RESEARCHER
Kalau ibu asli dari mana bu?

LAKSMITA
Kami dari Karo. Suami dari kampong Simacem, saya dari kampong Kuta Tengah. Jadi keluarga saya dan keluarga suami, ibu bapak kami juga kena erupsi. Mereka mengungsi juga.

Tapi waktu mengungsi, orang orang dari kampung Kuta Tengah mereka mengungsi di GPDI simpang empat, kecamatan Simpang Empat. Sementara kami mengungsinya di UKA.

Jadi pengungsiannya kan di banyak tempat. Kami terpisah… saya dan keluarga di tempat berbeda dengan mertua juga dnegan orang tua saya…. Jadi ga ada yang tolong waktu di UKA, makanya kami putuskan untuk sewa rumah aja pas setelah melahirkan…

Cuma untungnya, rumah mertua dna orang tua saya itu, desa desa mereka ga tertutup debu vulkanik, jadi mereka dipengungsian Cuma beberapa bulan aja. Setelah itu mereka balik lagi kerumah mereka. Orang itu masih bisa pulang ke rumah ....tapi udah masuk zona merah dia

RESEARCHER
Sekarang sudah di zona merah ya

LAKSMITA

iaa , e-em itu lagi cuman desa paling dekat ke gunung itu .... saya takut kalau terjadi apa apa dengan mereka…

Jadi sekarang ini pas di Siosar, kepikiran juga sama orang tua yang disana, takut kenapa kenapa… takut kalau Sinabung erupsi lagi, mereka kan sudah tua… takut ada apa apanya lagi. Itu kan kecamatan simpang empat... itu memang hadap –hadapan zona merah aja hadap –hadappan kalau misalnya datang awan .panas..itu.... orang itu di depan orang itulah ...eem di depan kampung itu…

Pingin ajak mereka tinggal di Siosar, tapikan rumah disini Cuma satu kamar… anak-anak dan suami aja sudah sempit sempitan disini, apa lagi kalau mau ajak orang tua saya…

Pokoknya, kami disini serba susah.. cobaan Tuhan…

RESEARCHER
Gimana Ibu rasanya tinggal di Siosar sekarang?

LAKSMITA
Kalau disini sih, kami sudah Puji Tuhan…. Karena sudah ga di pengungsian lagi… sudah membaik. Kalau kami di sini di Siosar sudah agak aman…

Cuma ya, tetap masih ada yang kurang, sebaik baiknya tempat ini, ga seperti tempat kami di desa asli…

Desa baru di Siosar ini kan boleh dibilang desa buatan… sementara yang tempat kami dulu itu memang asli, karena kami lahir dan besar disana… Siosar ini lokasinya di perbukitan, ga rata… rumah rumah penduduk itu ada yang di atas dan di bawah lokasinya, kalau rumah saya letaknya dibagian bawah… jadi kalau ke mana-mana harus mendaki keatas. Kalau sakit dan mau ke klinik harus jalan kaki keatas… Rasanya terlalu jauh… kalau mau ke kantor kepala desa pun rasanya jauh sekali.

Belum lagi kalau pas sakit mau dikirim ke Puskesmas kami di Naman Teran… jauh sekali. Ga tahu saya kenapa kalau sakit kita kalau dirujuk nya harus ke Naman Teran. Padahal Puskesmas terdekat itu adalah yang di Singa. Itu Cuma 10 menit dari sini. Kita lewati tempat itu kalau mau ke Kabanjahe dan ke Naman Teran. Makanya, kalau sakit, agak malas ke klinik di Siosar, soalnya takut di rujuk ke Naman Teran. Kalau sakit, kita suka perginya ke Puskesma Singa aja… Soalnya dekat… Kadang kalau ke Puskesmas Singa, petugasnya suka tanya kenapa ga ke Puskesmas Naman Teran. Kalau udah begitu, saya biasanya ga bisa jawab, senyum aja, soalnya saya tahu pasti mereka tahu alasan saya dating ke Puskesmas Singa dan ga ke Puskesmas Naman Teran.

Saya kalau ke klinik diatas cuma kalau flu flu ringan aja, atau anak mau ke Posyandu aja…

RESEARCHER
Gimana pengalaman ibu waktu ke klinik di Siosar?

LAKSMITA
Bidannya bagus… si Efri, bidan kami itu, bagus orangnya, bisa ngambil hati orang. Dia baik sekali, orang suka cari dia. Malah yang dari desa lain pun kalau sakit pasti dating ke dia… makanya, klinik kami paling banyak orang dibanding yang klinik lainnya. Sering kalau bidan bidan desa sebelah itu ga ada, mereka suka menghilang…. Kalau mereka ga ada, si Efri suka panggil mereka dan layani mereka. Dia bilang kasihan lihat orang orang didesa tetangga, bidannya suka hilang hilang padahal mereka butuh berobat… makanya, kita disini saying sama si Efri.

Kalau ibu hamil pun gitu ...udah 2 orang melahirkan di sini di tolong si efri eem ia .... padahal dia masih PTT kan masih.... masih ....pengalaman nya masih kurang gitu..... tapi udah 2....em disini melahirkan eem

Anak saya kalau flu, ke si Efri, pasti sembuh.

RESEARCHER
Berarti dia..... ibu puas gitu .....cara ....

LAKSMITA

Ia.

Cuma kalau peralatannya masih terbatas disana. Kan di klinik itu ada satu kamar untuk bidan tinggal, terus ada ruang periksanya dan ada pojok untuk pasien tunggu… bangunannya bagus dan sudah layak… tapi peralatannya harus di tambah… peralatannya ga se lengkap kalau yang di Puskesmas gitu… juga satu hal lagi, air di klinik diatas kadang ga jalan… jadi beberapa kali kalau ke toilet mau buang air itu ga bisa siram…. [Tertawa].. malah lagi sering mati listrik….

Juga obat obatan di klinik atas agak terbatas.

RESEARCHER
Kalau boleh saya ulangi, ibu bilang tentang obat obatan disana yang terbatas. Bisa ibu jelaskan?

LAKSMITA
Juga sekarang sudah ga gratis lagi… Jadi bingung saya waktu pertama kesana… ga bawa uang, karena biasanya di pengungsian itukan gratis, pas pindah kesini harus bayar… Kalau mau tambah obat harus bayar.

Padahal obat obatnya itu sederhana.. itu itu aja… tapi harus bayar sekarang… jadinya, banyak orang yang kalau mau beli obat-obat yang bagusan itu harus ke apotik di Kabanjahe.

RESEARCHER
Ia, Terakhir dari saya bu, apa harapan ibu untuk e-em kira-kira eem yang ibu mau di sediakan di pos—kesehatan di pengungsian kalau kedepanya itu, ada terjadi bencana?

LAKSMITA
e-em harapan-nya ya itu.....e-e Dinas kesehatan itu menyediakan bidan-nya yang apa.....eem . yang berpengalaman gitu .....yang sabar ..eem ..menghadapi orang-orang banyak..... namanya kami juga e-e dapat musibah kan ....emosi kami kan kadang ....e-e .kadang–kadang engak labil gitu pak ee terus dia ee maunya bidanya itu harus sabar menghadapi kami ....namanya ibu hamil kan banyak juga permintaannya.....e-em ... ada yang.... mereka..... macam-macam lah penyakit nya....

Kek aku dulu kan .....kalau yang no 2 itu ,yang abangnya, kaki sering kebas, entah kenapa gitu ,kalau yang kecil ini kemarin gigi dari mulai dia ada di perut sampai lahir.... gigi nya engak sembuh–sembuh,..... sakit terus itu bawaannya gitu e-em jadi kan lain orang... lain apanya ....jadi maksud-nya bidan nya lebih sabar gitu.

Juga peralatan kesehatannya pun harus lebih lengkap jangan cuman e-e ukur tensi-nya aja eem sama detak jantungnya gitu. Kalau bisa sekalian USG nya itu kalau bisakan ...USG nya itu kan per 3 bulan sekali itu.. seharus nya USG nya ,jangan mau lahiran aja cuman distu ...di sediakan USG nya gitu ekch eem

Terus, tempat pengungsiannya harus dibuat lebih baik lagi. Kalau bisa ada sekat sekat untuk keluarga. Soalnya, pengalaman 2013 dipengungsian itu kan belum sempurna. Orang tidur di tempat terbuka… Tetangga lagi di situ ....satu-satu tikar kek gini e-em jadi kan engak bebas. Malah, ada cerita cerita suami tidur di tikar tetangga… ada cerita cerita selingkuh… terus ada juga cerita cerita orang sewa hotel atau ke kebun kebun… untuk hubungan suami istri karena di pengungsian ga aman untuk begituan… Terus kalau malam yan sudah ga tahan akhirnya berhubungan suami istri aja ditutup selimut… [ketawa]… jadi ga bagus kan untuk anbak anak kecil. Pokoknya, seperti cerita cerita ibu ibu waktu diskusi kita malam tadi Pak… banyak lucu lucunya… makanya kalau bisa harapan saya kedepannya bisalah dibuat pengungsian yang lebih baik yang ada sekat sekatnya, jadi keluarga kita tetap utuh…

Maunya juga ibu ibu hamil itu di data and ajari gimana caranya untuk bertindak kalau ada erupsi…. Biar kita bisa tahu apa yang harus dilakukan, ga teriak teriak aja…. [tertawa]…

Ibu hamilnya, suaminya, orang orang sekampung itu harus di ajari bagaimana caranya menyelamatkan orang termasuk ibu hamil saat ada erupsi.

Ia, maunya di sediakan gitu mobilnya gitu e-e biar jangan kita kadang-kadang kan kalau udah kek gitukan semuanya jadi sibuk ...maunya ada di sediakan kendaraannya gitu ,terus kita pun sadar diri gitu ,melapor

lah pada saat itu nanti aku perlu kendaran ...eem .itu kurasa nanti aku sehat .gitu ajaa laah gitu ..kendaraan itu lah yang paling penting gitu eem kalau kami di sini itu lah dulu ...soalnya kan jauh keatas eckh echkh eem

RESEARCHER
Baik Ibu, ada yang mau di tambahkan?

LAKSMITA
Ga ada, itu aja.

RESEARCHER
Terima kasih banyak bu ia atas waktu dan ...mau berbagi cerita.
Salam untuk Bapak dan anak anak ya.

Selamat malam.

---end---

Appendix Q: Example – Transcription [English version]

Individual Interview

RAHASIA / CONFIDENTIAL

Code:	Woman	II	Village 1

Hari / Tanggal: Sunday, 10 January 2018

RESEARCHER
Good evening. Thank you very much for giving your time to meeting us again. After our group discussion last night, we would like to ask you more questions.

From the explanation earlier about the research objectives, do you have any questions?

LAKSMITA
Nothing. It is clear

RESEARCHER
Great! Thank you so much.

Last night during our group discussion, you mentioned that you were four months pregnant when the 2013 eruption occurred. And you were also about to deliver your baby during the 2010 eruption. Would you please elaborate more the experiences during giving birth in 2010 and compare it with the experience during pregnancy in 2013?

LAKSMITA
Experience 2013 and 2010 yeah... I felt grateful that during the 2013 eruption, the services provided were free. I thought that the government had improved and much better when handling in 2013 compared to 2010 ... Including health services that were free… *I am thankful that the services were provided free-of-charge…compared to the 2010 eruption, I paid a lot of money when I delivered my first baby.* My experience in 2010 ... we have no preparation ... like a farmer, we rely on money that gains from harvesting. When the eruption occurred in 2010, we were just planted our farm, so all money was used to buy seeds. We run out of money, then when the eruption occurred in 2010 we did not have money. When I was about to deliver our baby, we faced difficulties to pay the fee. So yeah, the 2010 experience was not so great. We got affected by the eruption and yet did not have money to pay for my delivery.

Then, when another eruption occurred in 2013, I noticed that we as the affected people were gaining more attention. Services were free of charge, there were facilities prepared for those who were about to deliver their babies when we visited health facilities, we were given medicines, multi-vitamins.

In 2010 there was no such thing ... everything needed to be paid. Even when we were displaced, there was no special attention to the affected people. We were then being sent from one place to another place… But, then during the 2013 event, it was free of charge. Including pregnant women were got special attention.

RESEARCHER
Can you tell us your experience while accessing health services in the 2013 event?

LAKSMITA

In 2013, there were officers in the UKA temporary shelter. The midwives were there to provide services to us, dedicated their services to the affected people.

However, in the temporary shelter, I saw the health team only came to our place 2 times ... When they came, many people were gathered ... but I could not check my pregnancy, it was a long queue… then the medicines were also limited ... they said that they ran out of medicine, they told us that they still waiting for the medicines to come, they have placed orders.

With this situation, when we came to the clinic, we lower our expectation. What's important for us during that time was at least midwives were able to 'touch' our tummy so that we were assured that our pregnancies were okay… [smile]…

RESEARCHER
Were you satisfied with the facilities --- in the clinic at the temporary shelter?

LAKSMITA
Yes ... I had to be satisfied ... [smile] ... it was not perfect. There was no proper door. It was just a piece of cloth/curtains to cover the area. But at least, there was a place for people to receive the 'very minimum' health services, where people could visit when sick or want to check their pregnancies. Better than nothing…

The facilities there in the clinic were not enough, just blood pressure, basic medicines ... that's all… just lacking, There was a time where a medical team visited us…. I did not know from where they came from…. But they performed better services…. Midwives checked my baby's heartbeat, they brought computer ... USG ... but many people came and it was a long queue. Then when they left, they brought all medicines and equipment including the USG with them back.

In that clinic, when I met a midwife, I felt much better and more comfortable. Even though the midwife just asking how I felt.. without doing proper checking… she could not open my clothes, because there was no partition to ensure privacy… I also felt uncomforted to be checked, I am worried if a strong wind came and remove the cloths…. Then people might saw me naked. Of course, it was the clinic in the temporary shelter… what should I expect? I felt so lucky when I finally got my turn to see them after a long queue…

RESEARCHER
How long did you wait to get the services?

LAKSMITA
The queue was long ... not only pregnant women, others like older people, those with running noses and eye infections due to volcanic ash volcanic were also lined up. It was a long queue.
Another thing was that people were not queuing properly. I remember, after a long waited, I went out from the queue line and heading to the restroom. When I returned to the line, I had to start over again… people did not respect others including prioritising pregnant women and older people.

RESEARCHER
How do you feel about the midwives who was assigned in the temporary shelter?

LAKSMITA
The midwife was good… But she had a lot of work ... The midwife lived with us in the refugee camp ... so she already knew how we felt... She tried her best to serve but at some point, I felt sorry for her… she had so many clients with lack of tools, lack of medicine, so she was also tired… I felt sorry for the midwives and other officers ... they have worked hard, sometimes they were also scolded by patients ... there had various kinds of requests ... sometimes I heard other people reminded others about the reality in the temporary shelter, asked them to have more patience. Some of the people told others that if they wanted to get a luxury type of services then they should find them in a luxury hospital in Medan not in this temporary shelter. I felt sorry about those midwives.

But if you want to be honest, when other midwives from other places assigned in our place, those midwives could be rude… they seemed did not want to hear our problem… they did not listen. When they passed on medicines, they did not speak nor smile to us… I knew that they were tired, but with those

attitudes, I sometimes questioned whether they were ready and well equipped to work in a disaster setting or not. They seemed not ready… I prayed to God to make me strong… because I have been affected by the eruption at the same time also angry by midwives… hemmm ... But it's fine… they are all memory… I just need to be grateful…

RESEARCHER
Well e-em, how is your opinion regarding medicines that were provided there?

LAKSMITA
Yes, overall, I had to be satisfied… because they were gratis…. Even though, I may say the drugs were very limited ...

If we wanted to ask for more drugs then we had to use our money ... because we had to buy them outside.

RESEARCHER
What about contraceptives?

LAKSMITA
I did not know that… Because right after giving birth in 2013, I had a vasectomy. I was afraid of getting pregnant again ... I am worried about our future…. So, I have no experience with regards to accessing family planning commodities in the temporary shelter.

RESEARCHER
Alright…. Can you please tell me how many times you went to the clinic in temporary shelter, when you were pregnant of the second baby, Rimna?

LAKSMITA
I went there twice… I was reluctant to visit the clinic because the clinic was not good enough. I felt embarrassed and shy… so many people watched me... very crowded…

RESEARCHER
So what did you do?

LAKSMITA
I finally went to another Puskesmas ... so another Puskesmas, so that I could feel satisfied. The Puskesmas has a proper room for checking my pregnancy and health, I got medicines, got correct examination, not felt ashamed too. Also, I felt relax, felt good, midwives were also not in a hurry.

RESEARCHER
Did you get 'pink book' when assessing health services?

LAKSMITA
The immunisation book? Yes, I got it. But it was from the Puskesmas I visited not from the clinic inside the temporary shelter.

The clinic in the temporary shelter was very basic.. Only from the puskesmas from which we are immunized, gave me the immunisation book.

RESEARCHER
Did you keep it?

LAKSMITA
Yes, I am still keeping it, but now I have to find where is that immunisation book.

RESEARCHER
I mean, when you visited health facilities, did you carry that book with you?

LAKSMITA

Yes, I always brought it whenever I visited health facilities. I know that the book records all the immunisation history of my baby.

I knew that Puskesmas might lose their records about my child health history.

Also, the clinic in the temporary shelter even more alarming. They used any paper to write clients' histories. With this, I was mindful with my baby's immunisation' histories. In the temporary shelter, I was aware that in that emergency context, health personnel were writing using any papers.. even they used the loose paper… then after that, they stored those papers inside an Aqua box [mineral water box]. SO what would happen next? When clients returned, they [health personnel] asked again the same questions… or even when they were super busy, they forgot to write, instead they just gave medicines straight away.. ... [laugh] ...

RESEARCHER
How important the immunization book for you?

LAKSMITA
Very important. Because the book tells you what types and when the immunizations have been given to my baby. Later on, I can find out whether or not the measles vaccine had been given to my baby ... hence, the book must be kept, because that's the health data.

But yes, when I was in temporary shelter, I don't think there was a copy of the book. I got mine from the Puskesmas.

RESEARCHER
How long did you stay in the temporary shelter?

LAKSMITA
I stayed there ... around 8 or 9 months. We then moved to a rented house soon after I gave birth because we felt sorry for our children ... they were still small. I was afraid of them getting sick ... because there were so many people in the refugee camp ... the toilets were always occupied, lack of water, too noisy during night time, so I was afraid for my kids to get sick.

Oh yeah ... the water was not good, rubbish everywhere… it was not a suitable place for babies.

Usually, mothers who have small children and babies rented a house when they just gave birth, because the temporary shelter was poor of hygiene…. But, when renting houses, it should be close to the temporary shelter so that we would not miss any distribution or any rations. For example rice, clothes, eggs, fish, meat, and other assistance from the government, also NGOs, and from Medan, Jakarta and other places.

RESEARCHER
Where do you originally come from?

LAKSMITA
We are from Karo. My husband is from Simacem village, I'm from the village of Central Kuta. My family and husband's family were also affected during the 2013 event. They were also displaced during that event.

They were staying in different places. The people from the village of Central Kuta took refuge in GPDI Simpang Empat, Simpang Empat sub-district. While we sought refuge in the UKA.

So we were separated ... my family and I were in a different place from my parents-in-law… So that was also another reason why we rented a house outside the temporary shelter, because no one was helping us while staying in UKA [temporary shelter].

Luckily, my parents-in-law's house, their villages were not covered by volcanic ash, so they were only evacuated for a few months. After that, they returned to their home. That person can still go home .... but already entered the red zone.

RESEARCHER
So now, it is in the red zone?

LAKSMITA
Yes, my parents' village is close to Mount Sinabung….I am worried about them.

So right now on Siosar, I also think of my parents there, afraid if something happened. I am afraid if Sinabung erupts again, they are already old. They live in a place that faces directly the Mount Sinabung. They live in a red zone… very dangerous when an eruption occurs, the hot cloud might come down and affect them.

I really would like to bring them to live with us here, but the house here is very small. We have got only one room ... the children and husband are already narrow squeezes here, imagine if I bring my parent here…

Anyway, life is very challenging here…. It's God's test for us...

RESEARCHER
How does it feel to live in Siosar now?

LAKSMITA
We praised the Lord for bringing us here. Because we are no longer in the temporary shelter… Siosar it is rather safer ...

But still, there is still something lacking here in Siosar… This place is not like our original village ...

This new village in Siosar is arguably an artificial village ... while the place where we used to be is indeed original because we were born and raised there ... Siosar is located in the hills, uneven ... the houses of the residents are above and below the location if my house is located at the bottom ... so if you go anywhere you have to climb up. If you are sick and want to go to the clinic, you have to walk to the top ... It feels too far ... if you want to go to the village head's office, it feels very far away.

Not to mention if you get sick when you want to be sent to our health centre in Naman Teran ... very far. I don't know why if we are sick if we are referred, we must go to Naman Teran. *I think Puskesmas Singa is the nearest to here. It takes just 10 minutes to reach there. When my son got sick, I went to Puskesmas Singa. The health personnel asked why I had not gone to Puskesmas Naman Teran. I did not answer because I knew that they already knew my reason.*

I only go to the clinic above if I have a mild cold, or if my child wants to go to the Posyandu ...

RESEARCHER
What was your experience when you went to the clinic in Siosar?

LAKSMITA
The midwife is good ... Ms. Efri, our midwife, is a good person, can take people's hearts. She is very kind, people like her. Even those from other villages, even if they are sick, definitely come to her ... that's why our clinic has more people than other clinics. Often when the midwives from the two other villages are not around. Then Ms Efri calls them and serves them.

So far at least two women had giving births with the help of Ms Efri… Although she is a fresh graduate and just *pegawai tidak tetap* - PTT [temporary government contract], still ... she has already helped two deliveries.

My children, if they have a cold, I bring them to Ms Efri…

RESEARCHER
Means you are satisfied with her services?

LAKSMITA
Yes, absolutely.

The only challenge we face here is that the equipment in the clinic here in Siosar is still limited. In the clinic, there is a room for midwives to stay, then there is an examination room, and there is a corner for patients to wait ... the building is good and decent ... but the equipment must be added ... the equipment is not as complete as the one at the Puskesmas ... also one more thing, water sometimes the clinic does not work ... so several times if you want to go to the toilet, you can't flush ... [Laughing] ... even more often power failure ....

Also the drugs at the top clinic are rather limited.

RESEARCHER
If I may repeat, you said about the limited medicines there. Can you explain?

LAKSMITA
Yes. Limited medicines… Also now it's not free anymore ... So I was confused the first time there ... did not bring money, because usually in the temporary shelter it was free. Now when we moved here, things have to be paid.

Even though medicine is simple ... that's all ... but you have to pay now ... so, many people who want to buy the good medicines must go to the pharmacy in Kabanjahe.

RESEARCHER
Alright… Finally based on your experience of being pregnant during the 2013 and 2010 events, what do you expect to have in a health post inside a temporary shelter in the future disasters?

LAKSMITA
The hope is that ... a health post should have midwives that are experienced in dealing with affected people.. because you know this is a disaster context… where people could have emotionally unstable.. hence, those midwives should have patience in dealing with affected people. Usually, affected people, especially those who are pregnant comes with a lot of requests… so midwives should be able to deal and handle those pregnant women.

I experienced so many symptoms when I was pregnant…. My legs were often numb, for some reason, I got toothache, gastroenteritis, and so on…. I wish midwives could be more patience when dealing with pregnant women during disaster response. .

Also, the medical equipment must be more complete, don't just measure the blood pressure with the heartbeat. There should be ultrasound for pregnant women to use once every 3 months ...

Then, the temporary shelter should be designed in a better way. If possible, there is a partition for the family. The thing is, the 2013 experience of being displaced was not perfect. People slept in an open space…Because of this open space, during the 2013 event, there were stories of husbands slept on neighbouring mats ... there were also stories of couples cheating ... then there were also stories of people rented hotel rooms or went to gardens ... for husband and wife to have sexual activities because there was no appropriate space in the temporary shelter... Then if the night they could not stand, the couple did sexual intercourse under blankets…. [laugh]… which was not good for children. Anyway, those were stories that came up from other women participants during last night group discussion…. I hope in the future, the temporary shelter could be made better with partitions that is respecting and considering the privacy of each family.

I also wish that all pregnant women to be registered and educated on how to act if there is an eruption ... So they could know what to do during a disaster, don't just scream ... [laugh]…

Pregnant women, with their husbands, and the entire community to be taught how to save people including pregnant women when there is an eruption.

I wish the government to prepare and provide vehicles to rescue people during an eruption. When they suspect there could be an eruption, they have to bring those vehicles closer in those disaster-prone areas so that when an eruption occurs, affected people could act immediately and use those vehicles… So is not waiting for vehicles to come.. it could take time...

RESEARCHER
Alright. Is there anything you would like to add?

LAKSMITA
Nothing, that's all.

RESEARCHER
Thank you very much for giving your time and for your willingness to share your story.

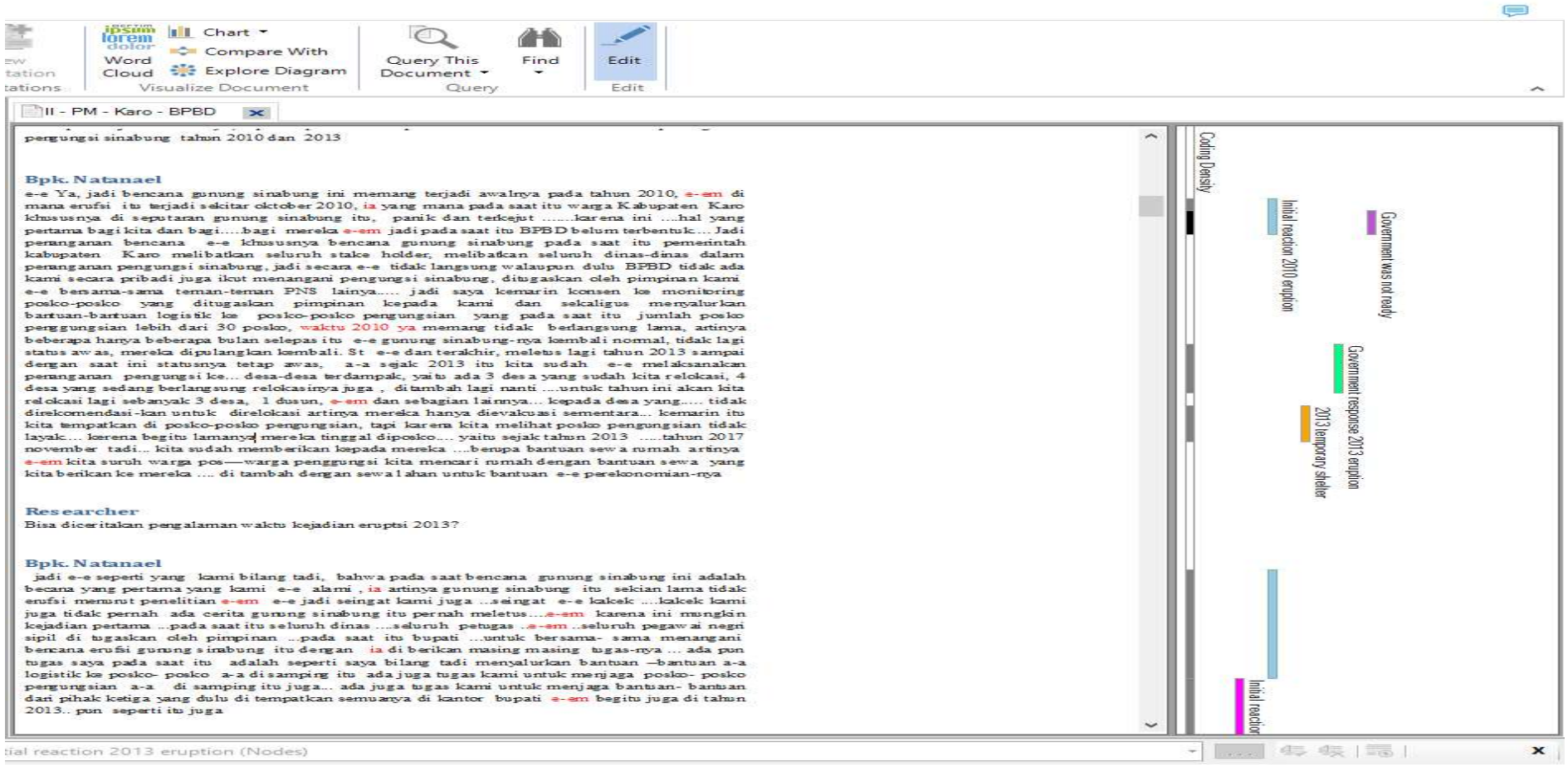
Please forward my best regards to your husband and kids.

You have a good night.

---end---

Stage 4: Analyse

Appendix R: Examples of nodes generated from NVivo software



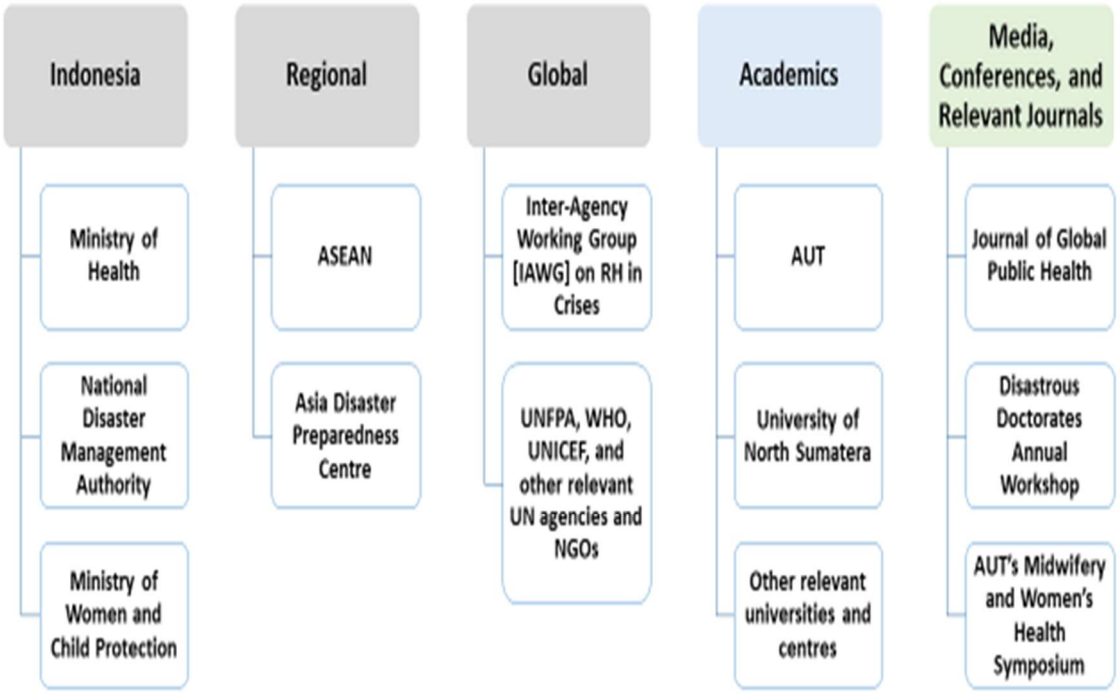
Name	Description	Examples
MRH services in UKA temporary shelters 2013	MRH Services provided to pregnant women 2013 in UKA temporary shelter	<Internals\\Data Collections and Analysis\\FGDs\\Bahasa - FGD - HP - Payung> - § 1 reference coded [0.37% Coverage] Reference 1 - 0.37% Coverage Saya juga turut bertugas piket. Meskipun saya petugas gizi bukan bidan, saya juga harus jaga malam. <Internals\\Data Collections and Analysis\\FGDs\\Bahasa - FGD - Women - Simacem> - § 1 reference coded [0.83% Coverage] Reference 1 - 0.83% Coverage Kami pergi ke tempat penampungan sementara di Desa Kaban Jahe. Aku tidak membayar selama memeriksa kehamilan saya di pos kesehatan serta selama melahirkan bayi di Rumah Sakit. <Internals\\Data Collections and Analysis\\FGDs\\Bahasa - FGD - HP - Payung> - § 1 reference coded [2.03% Coverage] Reference 1 - 2.03% Coverage Kami tidak bisa memberikan layanan penuh 7Ts daripada ANC, karena keterbatasan tempat dan sarana. Klinik di sana sangat sederhana. Juga tidak bias suntik tetanus. Sya tidak bias buka baju ibu hamil karena malu.. khan di tempat terbuka dan umum. Waktu itu saya sururh ke puskesmas atau klinik sekitar UKA. Beda desanya beda tempat ngungsinya. Waktu itu saya mengungsi di kecamatan Berastagi. Kemana masyarakat kesitu kita harus wajib ikut sama masyarakat kita. Iya petugas kesehatan wajib ikut kemana penduduknya mengungsi kita ikut ngungsi. <Internals\\Data Collections and Analysis\\FGDs\\Bahasa - FGD - Women - Simacem> - § 5

Name	Description	Examples
		references coded [1.52% Coverage] Reference 1 - 0.28% Coverage Waktu itu dokter .... Dan beberapa waktu lain juga ada bidan Reference 2 - 0.60% Coverage Saya diperiksanya tekanan darah, mereka meminta nama saya, memeriksa mata saya, dan menyentuh dan mendengarkan dari perut saya. Reference 3 - 0.14% Coverage Mereka memberi saya vitamins. Reference 4 - 0.26% Coverage Staf kesehatan benar-benar memperhatikan wanita hamil.
Devastation of 2013 eruption	Experiences during the night of the 2013 eruption	<Internals\\Data Collections and Analysis\\FGDs\\Bahasa - FGD - HP - Payung> - § 6 references coded [2.62% Coverage] Reference 1 - 0.11% Coverage hujan debu, terus lampu mati, Reference 2 - 0.10% Coverage kayu-kayu itu patah semua, Reference 3 - 0.25% Coverage

Name	Description	Examples
		Waktu itu jaringan telepon hilang timbul, sulit untuk berkomunikasi Reference 4 - 0.26% Coverage Waktu itu tidak ada signal handpohone. Lampu mati dan jaringan hilang. Reference 5 - 0.25% Coverage Kami lihat pijaran api dari Gunung Sinabung.. sangat menakutkan. Reference 6 - 1.65% Coverage Waktu itu Bidan Desa mewreka ada mengungsi di tempat lain. Itu dulu di Desa Kurkenayan. Sama-sama mengungsi, waktu di jambur depan, Ibu Bidan Desa dia disini bolak balik ke Puskesmas juga. kami suruh lah dia disini karena nunggu hari. Dia jaga juga di posko. Pas setelah itu, mereka berpindah pindah tempat … pada kocar kacir… dan akhirnya bidannya pas waktu itu lagi ntah kemana mana gitu jadi penanganan terakhir rumah sakit umum gitu.

Stage 5: Share and Report

Appendix S: Research and Dissemination Strategy



=== end ===