

# INDONESIA MILITARY ROLES IN DISASTER RESPONSE

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General Studies

by

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## ABSTRACT

INDONESIA MILITARY ROLES IN DISASTER RESPONSE, by Major Winner Fradana Dieng, 85 pages.

Indonesia is geographically located along the Ring of Fire, averaging between 200-300 earthquakes and tsunamis a year. In 2004, a big earthquake occurred followed by tsunami in Aceh and surrounding areas, resulting in more than 230,000 fatalities throughout fourteen countries. This disaster became Indonesia's cornerstone to disaster management. From it, the country learned the Indonesia Military (TNI) is the most reliable institution to respond to natural disaster emergencies. Nevertheless, to conduct disaster response tasks, TNI faced limitations to its effectiveness. The purpose of this study is to discover gaps in the deployment of the TNI as a quick response task force to natural disasters in Indonesia using the qualitative research methodology of case study analysis to compare and contrast the Indonesian models of the Aceh tsunami of 2004 and the 2018 earthquake, tsunami, and liquefaction in Palu-Donggala to the US Hurricane Katrina in 2005. Indonesian law and policy for disaster management played a large role to leverage TNI roles in disaster response. This study answers the question regarding effectiveness of TNI as the quick task responder to Indonesia disasters.

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## ACRONYMS

BASARNAS	<i>Badan SAR Nasional</i> [National Search and Rescue Agency]
BNPB	<i>Badan Nasional Penanggulangan Bencana</i> [National Disaster Management Authority]
DSCA	Defense Support of Civil Authorities
FDR	Foreign Disaster Relief
FHA	Foreign Humanitarian Assistance
ICS	Incident Command System
KODAM	<i>Komando Daerah Militer</i> [Regional Military Command]
KODIM	<i>Komando Distrik Militer</i> [Military District Command]
KORAMIL	<i>Komando Distrik Militer</i> [Military District Command] It is KOREM's subunit and equivalent to a company-level unit.
KOREM	Komando Rayon Militer which means [Military Rayon Command]. It is a KODAM's subunit and equivalent to a brigade-level unit.
NDRF	National Disaster Response Framework
NRF	National Response Framework
NGO	Non-Governmental Organization
NIMS	National Incident Management System
TNI	<i>Tentara Nasional Indonesia</i> [Indonesian National Armed Forces]
TNI AD	<i>Tentara Nasional Indonesia Angkatan Darat</i> [Indonesian National Armed Forces-Army]
TNI AL	<i>Tentara Nasional Indonesia Angkatan Laut</i> [Indonesian National Armed Forces-Navy]
TNI AU	<i>Tentara Nasional Indonesia Angkatan Udara</i> [Indonesian National Armed Forces-Air Force]

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## CHAPTER 1

### INTRODUCTION

Ring of fire that surrounds Indonesian territory can bring disaster beyond our presumption. Almost all parts of Indonesia are disaster-prone areas. Earthquakes, landslides, volcanic eruptions, tsunamis, forest fires, floods. Therefore, being alert and ready to face uncertainty is very important! Our capacity to manage risk in the face of global economic turmoil in managing unforeseen disasters must be strengthened. Our development must be sensitive to various risks. Infrastructure must be prepared to support disaster risk mitigation. The community must also be vigilant and aware of risks.

—Joko Widodo, *74th Indonesia Independence Ceremony*

The Tentara Nasional Indonesia [Indonesia Military] (TNI) performs disaster relief operations as an other-than-war task. TNI provides a military response to emergency natural or man-made disaster that overwhelm Indonesian provinces and local assets. The latest example of the disaster relief operation conducted was during the Palu earthquake and tsunami relief effort. On 28 September 2018, a heavy earthquake struck Palu-Donggala, followed by a tsunami and liquefaction, resulting in 2,010 fatalities and 6,655 people losing their homes and needing temporary shelter.<sup>1</sup> TNI was deployed to the affected area on 30 September 2018 to conduct emergency relief effort with government agency task forces under the coordination of the Central Sulawesi Governor. It demonstrated that the central government needs more than 24 hours to deploy its first response task force in large-scale emergency circumstances. Despite central government response time to the large-scale emergency, the disaster relief operation successfully returned conditions to a conducive status, established refugee camps for displaced persons, and managed food assistance and health assistance.

## Background

Indonesia is geographically located on the Ring of Fire.<sup>2</sup> It has more than one hundred active volcanoes and experience hundreds of earthquakes every year. Indonesia has 17,499 islands and 5,455,675 square-kilometer area of sea and land in total.<sup>3</sup> However, having many islands connected by seas can make transportation challenging. Moreover, in the case of disaster, sea transportations are the most affected, especially by tsunami and hurricane. Weather factors sometimes can be unpredictable and extremely dangerous for sea transportation.

The Indonesia government has serious concerns about disaster management since the earthquake and tsunami that struck Aceh and surrounding areas in 2004 resulting in more than 230,000 fatalities throughout fourteen countries.<sup>4</sup> Since then, the Indonesia government issued Executive Order no. 83/2005 concerning the National Coordination Agency for Disaster Management (Bakornas PB). The Bakornas PB, now called BNPB, coordinates the national disaster management for mitigation and disaster relief operations. However, this agency role is mainly for coordinating disaster management efforts. It has limitations in handling disaster relief operations, especially in the matter of personnel numbers.

In the case of the 2004 earthquake and tsunami in Aceh, the country learned that the Indonesia military or *Tentara Nasional Indonesia* (TNI) is the fastest and most reliable national institution to be the first and main responder to natural disaster emergencies. The TNI, consisting of the Army, Navy and Air Force, have the resources and capability to sustain personnel in extreme environments. In the case of 2004 Aceh tsunami, logistics were a problem because there were no assets that could supply a huge

number of refugees and support the organizations conducting humanitarian aid operations in the Aceh Province.

In many major natural disasters, TNI has to fill many gaps to handle the natural disaster. Although experienced, TNI is constrained by orders from the national government to deploy large scale operations to conduct disaster relief operations. An earthquake, tsunami, and liquefaction occurred on 28 September 2018 around 18:00 hours WITA (Indonesia Central Time), but the Disaster Relief Task Force from Kostrad was unable to depart until 1 October 2018 from Makassar, South Sulawesi. The task force was ready to deploy sooner but had to wait for government orders to depart because the central government had to first fulfill specific criteria to legally declare a national disaster to justify a large-scale military operation. The challenge was communications were completely cut off between the central government located on Java and the affected area located in Palu, West Sulawesi. The extent of liquefactions caused common communications to fail so the central government could not immediately assess the situation. The tsunami made the seaport inaccessible while the earthquake made the main roads to the affected area impenetrable, isolating the affected area some time.

The transportation and communication disruptions during natural disasters cause the central government to lose time and appear unresponsive to declare a national disaster. Thus, the Indonesia military lose time waiting for the central government to make the declaration and deploy a military operation in response to the natural disaster.

### Problem Statement

Currently, there is limited literature regarding military deployments in response to emergency relief efforts. Indonesia, itself, is a unique country in which emergency

responses to disaster relief are likely to overlap with other occurring relief efforts. The Indonesian government has to first declare an emergency situation as a national disaster to deploy the military in an emergency natural disaster response, but the scale must be appropriate to ensure the central government has the resources to conduct other operations. It prevents a military response to the natural disaster in less than a 24-hour time frame. The agency for natural disaster in the affected area is often undermanned and focused on coordinating disaster mitigation. TNI also faces overcoming the distance between the unit ready to deploy for human disaster missions and the affected area.

#### Purpose of This Study

The purpose of this research is to discover gaps in the deployment of the TNI as a quick response task force to natural disasters in Indonesia. At this stage of the research, a natural disaster is generally defined as a large-scale natural disaster, which means the local government is already overwhelmed and the local infrastructure is severely affected. Therefore, the intent of this thesis is to understand how to utilize limited assets and resources to establish a large-scale emergency disaster relief.

#### Research Questions

The following questions will guide this study.

Primary research question: What are the challenges preventing TNI to conduct disaster response in less than 24-hours?

Secondary research questions: How to integrate agencies other than TNI to form task force response team in a very short time? Does the country have proper policy to conduct integrated national disaster response?

## Definitions

Terms used within the context of this thesis are described below.

Archipelago: An archipelago is a group of islands, especially small islands.<sup>5</sup>

BASARNAS: *Badan SAR Nasional* [National Search and Rescue Agency], Indonesia's national agency for search and rescue.<sup>6</sup>

BNPB: Acronym for *Badan Nasional Penanggulangan Bencana* [National Disaster Management Authority], Indonesia's national agency for disaster management.<sup>7</sup>

KODAM: Acronym for *Komando Daerah Militer* [Area Military Command]; a division-equivalent Army unit whose primary task with a territorial purpose.<sup>8</sup>

KODIM: Acronym for *Komando Distrik Militer* [Military District Command], a KOREM subunit equivalent to a battalion.<sup>9</sup>

KORAMIL: Acronym for *Komando Rayon Militer* [Military Sub-District Command], a KODIM subunit equivalent to a company.<sup>10</sup> It is the lowest level unit in a territorial command.

KOREM: Acronym for *Komando Resor Militer* [Military Resort Command], a KODAM subunit equivalent to a brigade.<sup>11</sup>

Liquefaction: "A phenomenon in which the strength and stiffness of soil are reduced by earthquake shaking or other rapid loadings. Liquefaction and related phenomena have been responsible for tremendous amounts of damage in historical earthquakes around the world."<sup>12</sup>

Ring of Fire: "The Ring of Fire, also referred to as the Circum-Pacific Belt, is a path along the Pacific Ocean characterized by active volcanoes and frequent earthquakes."<sup>13</sup>

Tentara Nasional Indonesia (TNI): The Indonesian joint military, consisting of the TNI AD (Army), TNI AL (Navy), and TNI AU (Air Force) components.<sup>14</sup>

Tentara Nasional Indonesia Angkatan Darat (TNI AD): The Indonesian National Army's active duty component.<sup>15</sup>

Tentara Nasional Indonesia Angkatan Laut (TNI AL): The Indonesian National Navy's active duty component.<sup>16</sup>

Tentara Nasional Indonesia Angkatan Udara (TNI AU): The Indonesian National Air Force active duty component.<sup>17</sup>

### Limitations

Time constraint is one of the limitations in the study, because the study needs to complete in ten months. The data collection phase can be a limitation because of where the study is located. The data collection could be better conducted in Indonesia where there are more opportunities to interview the disaster response stakeholders. Limited access to TNI after action review report from case studies because the classification degree of its report. Limited amount of formal report on 2018 Palu-Donggala case study because it is relatively new.

### Scope and Delimitations

The study is descriptive in nature and focused on Indonesia's natural disasters, focusing on the tsunami in Aceh in December 2004 and the earthquake followed by a tsunami and liquefaction in Palu in September 2018 in comparison to the 2005 Hurricane Katrina disaster management. The research samples are composed of Indonesia's

authority in handling the natural disasters in Aceh 2004 and Palu 2018, and the US federal government's management of Hurricane Katrina in 2005.

The Indonesian research data was based on the researcher's personal experience, observation, and online research from various sources. It focuses on the response procedures to natural disaster emergency situations.

### Significance of the Study

A study of the Indonesian military as first responders to natural disasters is important for several reasons. First, Indonesia, a country located on the Ring of Fire, experiences hundreds of earthquakes each month that sometimes escalate into a major disaster. The disaster casualties rise significantly when a large-scale disaster response is delayed by even a few days. Understanding the importance of Indonesian military roles in disaster response increases its effectiveness. Second, understanding the challenge the Indonesia government faces when initiating large-scale disaster response operations can help other countries to solve problems in addressing disasters. Third, Indonesia can mirror other models from the US Army to conduct Defense Support of Civil Authorities (DSCA) operations to efficiently deploy military forces for domestic disaster relief missions.

### Summary

This chapter included an overview of the Indonesia national efforts in handling massive-scale disaster relief. This chapter contains an overview of the gaps the Indonesia government needs to overcome to provide optimum efforts in conducting disaster relief operations.

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<sup>1</sup> British Broadcasting Corporation Indonesia, “Gempa tsunami Palu Donggala: Korban tewas menjadi 2.010 orang, relawan asing ‘diusir’ [Palu Donggala tsunami earthquake: 2,010 fatalities, foreign volunteers ‘expelled’],” 9 October 2018, accessed 8 December 2019, <https://www.bbc.com/indonesia/indonesia-45795653>; Antara National News Agency, “Sebanyak 6.655 Korban Gempa Palu Masih Hidup di Tenda-tenda [National Home News Event: 6,655 Palu Earthquake Victims Still Live in Tents],” Cable Network News Indonesia, accessed 8 December 2019, <https://www.cnnindonesia.com/nasional/20190526181931-20-398540/sebanyak-6655-korban-gempa-palu-masih-hidup-di-tenda-tenda>.

<sup>2</sup> National Geographic Society, “Ring of Fire,” 5 April 2019, accessed 26 September 2019, <https://www.nationalgeographic.org/encyclopedia/ring-of-fire/>.

<sup>3</sup> Marsetio, *Kepemimpinan nusantara* [Archipelago Leadership], 2nd ed. (Bogor, Jawa Barat, Indonesia: Indonesia Defense University, 2018), 3.

<sup>4</sup> Aswab Nanda Pratama, “26 Desember 2004, Gempa dan Tsunami Aceh Menimbulkan Duka Indonesia [26 December 2004, Aceh Earthquake and Tsunami Cause Indonesian Grief],” Kompas, 26 December 2018, accessed 8 December 2019, <https://nasional.kompas.com/read/2018/12/26/11213301/26-desember-2004-gempa-dan-tsunami-aceh-menimbulkan-duka-indonesia?page=all>.

<sup>5</sup> *Merriam-Webster*, s.v. “archipelago (n.),” accessed 8 December 2019, <https://www.merriam-webster.com/dictionary/archipelago>.

<sup>6</sup> Republic of Indonesia, Executive order no. 83 (2016), *Badan Nasional Pencarian Dan Pertolongan* [National Search and Relief Agency], JDIH BPK RI [Audit Board of Republic of Indonesia Legal Document and Information Network], line no. 186/2016, 7 September 2016, accessed 21 December 2019, <https://peraturan.bpk.go.id/Home/Details/40987/perpres-no-83-tahun-2016>.

<sup>7</sup> Republic of Indonesia, Law no. 24 (2007), *Penanggulangan Bencana* [Disaster Management], Badan Nasional Penanggulangan Bencana [Indonesian National Board for Disaster Management], 26 April 2007, accessed 21 December 2019, [https://www.bnppb.go.id/ppid/file/UU\\_24\\_2007.pdf](https://www.bnppb.go.id/ppid/file/UU_24_2007.pdf).

<sup>8</sup> GlobalSecurity.org, “KODAM – Military Regional Command,” 2009, accessed 8 December 2019, <https://www.globalsecurity.org/military/world/indonesia/kodam.htm>.

<sup>9</sup> Ibid.

<sup>10</sup> Ibid.

<sup>11</sup> GlobalSecurity.org, “KODAM.”

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<sup>12</sup> Jörgen Johansson, “What is soil liquefaction,” University of Washington, 27 January 2000, accessed 26 September 2019, <https://depts.washington.edu/liquefy/html/what/what1.html>.

<sup>13</sup> National Geographic Society, “Ring of Fire,” 5 April 2019, accessed 26 September 2019, <https://www.nationalgeographic.org/encyclopedia/ring-fire/>.

<sup>14</sup> Republic of Indonesia, Indonesian Law 34 (2004), *Tentara Nasional Indonesia* [Indonesian National Army], Dewan Perwakilan Rakyat Republik Indonesia [The House of Representatives of the Republic of Indonesia], 16 October 2004, accessed 21 December 2019, [http://www.dpr.go.id/dokblog/dokumen/F\\_20150616\\_4760.PDF](http://www.dpr.go.id/dokblog/dokumen/F_20150616_4760.PDF).

<sup>15</sup> Ibid.

<sup>16</sup> Ibid.






<sup>17</sup> Ibid.

## CHAPTER 2

### LITERATURE REVIEW

In 2018, total of 5,357 deaths caused by natural disaster occurred throughout Indonesia. It placed Indonesia in the top five countries with the deadliest natural disasters, as depicted in table 1.<sup>1</sup>

Table 1. Top Five Mortality 2018

 Indonesia	<b>Earthquake/Tsunami</b>	<b>4 340</b>
 Indonesia	<b>Earthquake</b>	<b>564</b>
 India	<b>Flood</b>	<b>504</b>
 Indonesia	<b>Volcano/Tsunami</b>	<b>453</b>
 Guatemala	<b>Volcano</b>	<b>425</b>

*Source:* Catholic University of Louvain, Centre For Research on the Epidemiology of Disasters, and U.S. Agency for International Development, “Natural Disasters 2018,” 6, ReliefWeb, accessed 1 January 2020. <https://reliefweb.int/sites/reliefweb.int/files/resources/CREDNaturalDisaster2018.pdf>.

From the table, it shows that earthquakes and tsunamis were the deadliest natural disasters in 2018. Dr. Sutopo mentioned in his panel discussion at the Indonesia National Defense Institute on 8 May 2019, that based on the Paleotsunami Study, Indonesia averages between 200-300 earthquakes and tsunamis per year.

The literature review shares the results of other closely related studies to the one being undertaken.<sup>2</sup> There are numerous literatures addressing the military conduct in

disaster relief in Indonesia and internationally. However, only a few discuss Indonesia's military employment in disaster relief compared to the US model. Therefore, the literature review will be conducted in the following subchapter, which will be the framework for establishing the importance of this study.<sup>3</sup>

### Indonesia Law and Policy

The Indonesia government has the responsibility to mitigate disaster risks with development programs delegated to the *Badan Nasional Penanggulangan Bencana* [Disaster Management Authority] (BNPB).<sup>4</sup> The most important government role in the implementation of disaster relief is determining the status and level of national and regional disasters.<sup>5</sup> Before determining the status and level of national disaster, government must consider the levels of fatalities, property loss, damages to facilities and infrastructure, coverage of the area affected, and socio-economic impacts.<sup>6</sup> However, under special conditions, the head of BNPB can conduct urgent disaster relief operations for a limited time before a formal declaration to reduce the risk and broader impact.<sup>7</sup>

BNPB is the national agency with the responsibility to coordinate disaster mitigation, response, rehabilitation, and reconstruction.<sup>8</sup> BNPB consists of the head of BNPB, and the disaster management director and executive elements.<sup>9</sup> The director elements are the representatives of ministries and institutions, including TNI, with the responsibility to formulate government policy for natural disaster management, observation, and evaluation of the natural disaster management.<sup>10</sup>

The National Disaster Response Framework (NDRF) is Indonesia's primary response document, and aims to clarify the roles, responsibilities, and organization of responses to a disaster.<sup>11</sup> This document describes the integration of every disaster

management stakeholder in Indonesia, and how the national task force is formed in response to emergency national disasters.

### TNI Roles in Disaster Relief

The Indonesian *Defence White Paper* states that natural disasters are one of many Indonesia threats.<sup>12</sup> Natural disasters are Indonesia's daily life, because of Indonesia located on the ring of fire. the disasters can happen any time and will affect Indonesian people if the government does not do any anticipation to mitigate the risk. In order to overcome the national threat, the Indonesia military has a responsibility to be the frontline of natural disaster management.

Indonesia Law 34, 2004, states that TNI has fourteen main tasks.<sup>13</sup> One of the tasks is to conduct operations to support disaster relief, refugee, and humanitarian aid. Implicitly, TNI must have the natural disaster relief capability in addition to other than war capability.

Indonesia Law 24, 2007, section 7, subsection 2, defines the government authority to establish the disaster level based on the number of casualties, total property loss, infrastructure damage, coverage of the affected area, and social-economic impact. Considering those indicators Indonesia Government needs time to consider those indicators, assuming communication channels are open. However, the national-level disaster declaration can potentially be delayed due to communication problems while the population affected must wait, facing life or death, during the communication blackout.

Indonesia Executive Order 8, 2008, designated BNPB as the national coordinator of natural disaster management.<sup>14</sup> That executive order also designates TNI as one of its elements. TNI will act under the coordination of BNPB once the national disaster is

established requiring additional time in the communication chain to respond to the natural disaster.

The role and responsibility of the stakeholders in the pre-disaster, emergency response and post-disaster phases are also described in the NDRF. To further clarify the TNI's role in NDRF, see table 2.

Table 2. TNI Roles in NDRF

<b>Emergency Response</b>					
	<b>Pre-Disaster</b>	<b>Emergency Alert</b>	<b>Emergency Response</b>	<b>Emergency Transition</b>	<b>Post-Disaster</b>
<p><b>Indonesia National Armed Forces</b> <i>Tentara Nasional Indonesia (TNI)</i></p>	<ul style="list-style-type: none"> <li>• Conduct preparedness activities in SAR and disaster assistance</li> <li>• Provide education, training, research, development, and human resources capacity building in SAE and humanitarian assistance</li> <li>• Participate in the DAR DRTF; Logistics DRTF; Public Works and Utilities DRTF</li> <li>• Build capacity through regular exercises</li> </ul>	<ul style="list-style-type: none"> <li>• Coordinate Rapid Reaction Unit in collaboration with BNPP and Ministry of PUPR</li> <li>• Supervise, mobilise, and control potential needs for military personnel</li> <li>• Ensure needs and safety of women, children, and vulnerable groups are given special consideration and priority in planning</li> </ul>	<ul style="list-style-type: none"> <li>• Provide search and rescue and disaster as requested</li> <li>• Ensure needs and safety of women, children, and vulnerable groups are given special consideration and priority in response activities</li> <li>• Work with Minister of Defence to determine need, eligibility, and approval for foreign military assistance in accordance with the Status of Forces Agreement in Disaster Response</li> <li>• Provide personnel to attach to all foreign military while in Indonesia</li> <li>• Participate in the SAR DRTF; Logistics DRTF; Public Works and Utilities DRTF; and Education DRTF</li> </ul>	<ul style="list-style-type: none"> <li>• Continue support in cooperation with BPBD and BNPB</li> <li>• Continue operations as needed</li> <li>• Assist in transition to recover</li> <li>• Ensure needs and safety of women, children, and vulnerable groups are given special consideration and priority in transitional activities</li> <li>• Participate in SAR DRTF; Logistics DRTF; Public Works and Utilities DRTF; and Education DRTF</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate the event and recommend actions for improved future response</li> <li>• Provide any observations and recommendations to after-action reports</li> </ul>

Source: Badan Nasional Penanggulangan Bencana [National Disaster Management Authority], *National Disaster Response Framework* (Jakarta, Indonesia: Badan Nasional Penanggulangan Bencana, 2018), 19.

As depicted in table 2, TNI and BNPB have a responsibility to establish a rapid reaction unit for a swift dispatch during disaster responses at the national level, which means the rapid reaction unit will only be activated after the government declares the national disaster status. While the NDRF consists of several agencies that work side-by-side to accomplish a common goal, it does not include a detailed explanation about the hierarchy of the rapid response units.

The head of BNPB may undertake disaster management measures for a limited time without a declaration from the central government.<sup>15</sup> The shortcoming of this policy is when BNPB has already deployed a large scale rapid reaction unit to one area while yet another large scale disaster occurs in a different part of the archipelago. The central government has to locate other units to deploy as a rapid reaction unit that may not be as prepared as the already deployed unit.

Syamsul Maarif suggests TNI roles in disaster response are extremely important.<sup>16</sup> In his illustration of the Mentawai tsunami in 2010, various modes of transportation were paralyzed. Local airstrip could not operate, roads and bridges destroyed, and sea waves as high as 5 meters caused by the tropical cyclone, kept humanitarian aid from reaching no further than the Sikakap port. Much assistance could not reach ground zero. Likewise, with the response to landslides and flash floods in Morowali, flash floods in Wasior, deployment of Navy ships in the Padang earthquake, and many more. Only paratroopers and the military helicopters could do the job.

To carry out disaster relief duties, TNI established a unit at the national level for rapid dispatch during disaster response, the *Satuan Reaksi Cepat-Penanggulangan Bencana* [Rapid Response Unit-Disaster Management] (SRC-PB).<sup>17</sup> The mobilization of

the unit is directly under BNPB and TNI headquarters.<sup>18</sup> SRC-PB is a joint unit from various government agencies that includes TNI, and is represented by the *Pasukan Pemukul Reaksi Cepat* [Rapid Reaction Strike Force from Kostrad] (PPRC).<sup>19</sup>

### Integration Effort

The integration efforts of each agency are important and could decrease the effectivity of disaster relief if not executed correctly. The integration effort, which includes the relationship between government agencies, NGOs, and citizens, is vital during the disaster response phase.

During the Bantul earthquake, the interorganizational relationship was put to the test. Yogyakarta Governor as head of the task force, local government, local disaster management authority, and assisted by Kodam IV-Diponegoro (Central Java Military Area Command) proved the effectivity of the task force.<sup>20</sup> However, this devastating calamity was never declared as a national disaster.<sup>21</sup>

Creating complex information systems makes bureaucratic communication dysfunctional, particularly during emergencies.<sup>22</sup> In the disaster response phase, typically the communication lines are interrupted and do not operate effectively. Organizational communication and decision-making during disasters have distinguishing characteristics and require special attention.<sup>23</sup> Indonesia's government and its citizens are influenced by the culture called *gotong royong*.<sup>24</sup> Gotong royong is understood as the cooperation within and between social networks.<sup>25</sup> However, this gotong royong system is only successful if supported by a good relationship between the government and its citizen in pre-disaster time. The quality of governmental relations with its citizens is also a major influence on the efficiency of local recovery.<sup>26</sup>

The integration itself was organized in NDRF 2018 as a Disaster Response Task Force (DRTF) system that should be the mechanism of the response command system. The task forces consist of search and rescue; displacement and protection; health; logistics; public works and utilities; education; and early recovery.<sup>27</sup> However, the activation of the task forces must be directed by the President or the BNPB to support the response activities. Which means the DRTF as integrated response will not be activated as long as the President and BNPB have not decided what state of emergency the disaster is.

### US Law and Policy

United States as a developed country, has many valuable concepts that other countries should learn from. Despite controversies of how the US has managed its natural disasters, the positive side of its practices can be valuable to improve the disaster management in Indonesia.

In conducting incident management, the US uses the *National Incident Management System* (NIMS) as a comprehensive approach to guide all levels of government, NGOs, and stake holder, unifying incident management efforts for natural and man-made disasters.<sup>28</sup> NIMS is applicable to all stake holders, regardless of the incident or location.<sup>29</sup>

Table 3. Overview of NIMS

NIMS Is	NIMS Is Not
<ul style="list-style-type: none"> <li>• A comprehensive, nationwide, systematic approach to incident management, including the command and coordination of incidents, resource management, and information management</li> </ul>	<ul style="list-style-type: none"> <li>• Only the ICS</li> <li>• Only applicable to certain emergency/incident response personnel</li> <li>• A static system</li> </ul>
<ul style="list-style-type: none"> <li>• A set of concepts and principles for all threats, hazards, and events across all mission areas (Prevention, Protection, Mitigation, Response, Recovery)</li> </ul>	<ul style="list-style-type: none"> <li>• A response plan</li> </ul>
<ul style="list-style-type: none"> <li>• Scalable, flexible, and adaptable; used for all incidents, from day-to-day to large-scale</li> </ul>	<ul style="list-style-type: none"> <li>• Used only during large-scale incidents</li> </ul>
<ul style="list-style-type: none"> <li>• Standard resource management procedures that enable coordination among different jurisdictions or organizations</li> </ul>	<ul style="list-style-type: none"> <li>• A resource-ordering system</li> </ul>
<ul style="list-style-type: none"> <li>• Essential principles for communications and information management</li> </ul>	<ul style="list-style-type: none"> <li>• A communications plan</li> </ul>

*Source:* Federal Emergency Management Agency, *National Incident Management System* (Washington, DC: Federal Emergency Management Agency, 2017), 1.

One of the most important elements in this document is the Incident Command System (ICS). ICS is the hierarchy in the structure that provides the line of command and coordination for the disaster response efforts.<sup>30</sup> This hierarchy can be very important to unifying disaster response efforts because it gives the command to rules multiple organization, from government, NGO, and private sectors. Therefore, it provides the command to make many decisions as needed.<sup>31</sup>

The US Department of Homeland Security through FEMA published the *National Response Framework* (NRF) to provide guidance for all the stakeholders responds to all types of incidents.<sup>32</sup> The purpose of NRF is to provide a system to establish essential community lifelines, such as safety and security, food, water, shelter, health, medical, and basic needs for the affected population.<sup>33</sup>

### US Military Roles in Disaster Relief

Under certain circumstances, the military can have many roles in a disaster response, especially when the disaster is large scale or when specialized logistics are required.<sup>34</sup> US military participation in disaster relief outside the US and its territories is called foreign humanitarian assistance (FHA). FHA includes foreign disaster relief (FDR) operations normally conducted to support United States Agency for International Development (USAID).<sup>35</sup> When participating in disaster relief, US military also conducts DSCA. What makes DSCA different from FHA is the location of the operation. DSCA is executed within the US and its territories.<sup>36</sup>

### US National Preparedness Goals

The US has a national preparedness system to place all stakeholders of the disaster response into one unified effort. The preparedness system itself is organized to achieve the national preparedness goals.<sup>37</sup> These goals are divided into six missions, which are prevention, protection, mitigation, response, and recovery.<sup>38</sup> The goals of response mission area core capabilities and preliminary targets can be used as the variables for comparison in the study and are modified to highlight the mission response related to military roles. The variables suitable for this study are operational coordination, mass care services, mass search and rescue operations, on-scene security, protection, and law enforcement, and operational communication.

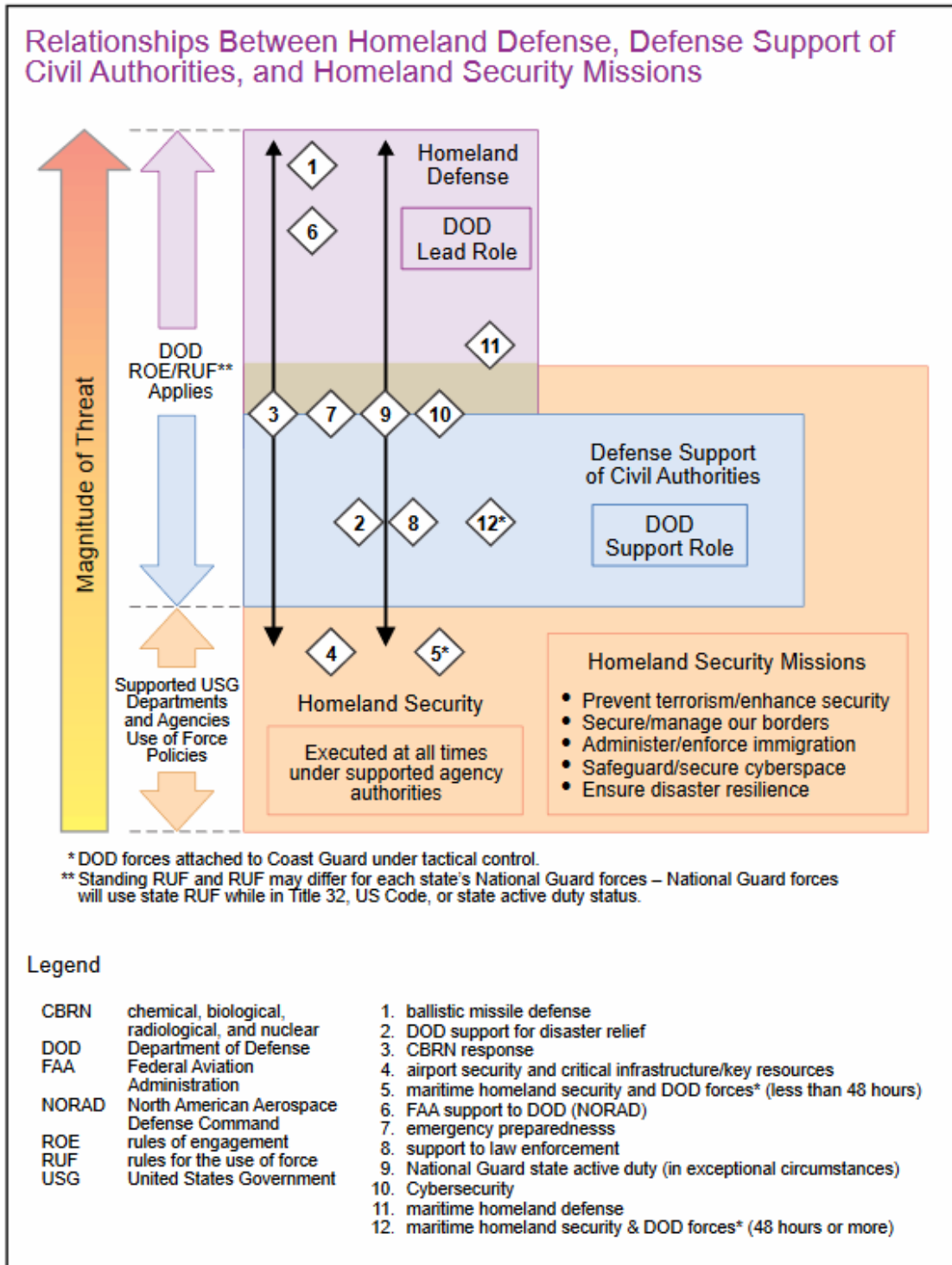


Figure 1. Relationship Between Homeland Defense, DSCA, and Homeland Security Mission

Source: Joint Chiefs of Staff, Joint Publication 3-29, *Foreign Humanitarian Assistance* (Washington, DC: Office of the Secretary of Defense, 2019), I-2.

### Summary

This chapter included a review of literature related to Indonesian law and policies, roles of TNI, US law and policies, and the roles of US military. Findings in this chapter are contained in the BNPB framework as a focal point to coordinate the stakeholders. TNI roles in disaster management are extremely important because of the flexibility and reliability of its capability, and integration at every level and community, and simplifies the bureaucracy of disaster management efforts

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<sup>1</sup> Catholic University of Louvain, Centre For Research on the Epidemiology of Disasters, and U.S. Agency for International Development, “Natural Disasters 2018,” 6, ReliefWeb, 6, accessed 1 January 2020, <https://reliefweb.int/sites/reliefweb.int/files/resources/CREDNaturalDisaster2018.pdf>.

<sup>2</sup> J. David Creswell, *Research Design*, 3rd ed. (Thousand Oaks, CA: Sage Publications, 2009), 25.

<sup>3</sup> Ibid.

<sup>4</sup> Republic of Indonesia, Law no. 24 (2007), Article 6.

<sup>5</sup> Ibid., Article 7.

<sup>6</sup> Ibid., Article 7.

<sup>7</sup> Republic of Indonesia, Executive order no. 17 (2018), *Penyelenggaraan Penanggulangan Bencana Dalam Keadaan Tertentu* [Implementation of Disaster Management in Certain Conditions], JDIH BPK RI [Audit Board of Republic of Indonesia Legal Document and Information Network], line no. 2018/34, 22 March 2018, Accessed 21 December 2019, <https://peraturan.bpk.go.id/Home/Details/77911/perpres-no-17-tahun-2018>.

<sup>8</sup> Ibid., Executive order no. 8/2008 (2008), *Badan Nasional Penanggulangan Bencana* [National Agencies for Disaster Management], JDIH BPK RI [Audit Board of Republic of Indonesia Legal Document and Information Network], 26 January 2008, accessed 21 December 2019, [https://www.bnpb.go.id/ppid/file/Perpres\\_08\\_2008.pdf](https://www.bnpb.go.id/ppid/file/Perpres_08_2008.pdf).

<sup>9</sup> Republic of Indonesia, Executive order No. 8/2008.

<sup>10</sup> Ibid.

<sup>11</sup> Badan Nasional Penanggulangan Bencana [National Disaster Management Authority], *National Disaster Response Framework* (Jakarta, Indonesia: Badan Nasional Penanggulangan Bencana, 2008), 1.

<sup>12</sup> Ministry of Defense of the Republic of Indonesia, *Defense White Paper* (Jakarta: Indonesia Defense Ministry, 2015), 17, accessed 21 December 2019, <https://www.kemhan.go.id/wp-content/uploads/2016/05/2015-INDONESIA-DEFENCE-WHITE-PAPER-ENGLISH-VERSION.pdf>.

<sup>13</sup> Republic of Indonesia, Indonesian Law 34 (2004), *Tentara Nasional Indonesia* [Indonesian National Army], Dewan Perwakilan Rakyat Republik Indonesia [The House of Representatives of the Republic of Indonesia], 16 October 2004, accessed 21 December 2019, [http://www.dpr.go.id/dokblog/dokumen/F\\_20150616\\_4760.PDF](http://www.dpr.go.id/dokblog/dokumen/F_20150616_4760.PDF).

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- <sup>14</sup> Republic of Indonesia, Executive Order No. 8/2008.
- <sup>15</sup> Ibid., Executive order No. 17/2018.
- <sup>16</sup> Syamsul Maarif, *Pikiran dan gagasan penanggulangan bencana di Indonesia* [Disaster management thoughts and ideas in Indonesia], 1st ed. (Jakarta, Indonesia: Badan Nasional Penanggulangan Bencana, 2012), 132.
- <sup>17</sup> Badan Nasional Penanggulangan Bencana, *National Disaster Response Framework*, 22.
- <sup>18</sup> Ibid., 22.
- <sup>19</sup> Ibid., 22.
- <sup>20</sup> Bevaola Kusumasari, “Network organisation in supporting post-disaster management in Indonesia,” *International Journal of Emergency Services* 1, no. 1 (2012): 76-77.
- <sup>21</sup> Neni Ridarineni, “Sultan: Gempa Yogyakarta 2006 tak Berstatus Bencana Nasional [Sultan: The 2006 Yogyakarta Earthquake did not have the status of a National Disaster],” *Republika Online*, 22 August 2018, accessed 16 December 2019, <https://www.republika.co.id/berita/nasional/daerah/18/08/22/pduo35430-sultan-gempa-yogyakarta-2006-tak-berstatus-bencana-nasional>.
- <sup>22</sup> Kusumasari, “Network organization,” 78.
- <sup>23</sup> Kusumasari, “Network organization,” 79.
- <sup>24</sup> Ibid.
- <sup>25</sup> Ibid.
- <sup>26</sup> Ibid.
- <sup>27</sup> Badan Nasional Penanggulangan Bencana, *National Disaster Response Framework*, 50.
- <sup>28</sup> Federal Emergency Management Agency, *National Incident Management System* (Washington, DC: Department of Homeland Security, 2017), 1.
- <sup>29</sup> Ibid., 2.
- <sup>30</sup> Ibid., 24.
- <sup>31</sup> Ibid., 24.

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<sup>32</sup> Federal Emergency Management Agency, *National Response Framework* (Washington, DC: Department of Homeland Security, 2019), ii.

<sup>33</sup> Federal Emergency Management Agency, *Community Lifelines Implementation Toolkit* (Washington, DC: Department of Homeland Security, 2019), 9.

<sup>34</sup> Jack Pinkowski, *Disaster Management Handbook* (Boca Raton, FL: CRC Press, 2008), 419.

<sup>35</sup> Joint Chiefs of Staff, Joint Publication (JP) 3-29, *Foreign Humanitarian Assistance* (Washington, DC: Office of the Secretary of Defense, 2019), I-2.

<sup>36</sup> *Ibid.*, I-2.

<sup>37</sup> Federal Emergency Management Agency, “National Preparedness System,” (2019, accessed 19 January 2020, <https://www.fema.gov/national-preparedness-system>).

<sup>38</sup> Federal Emergency Management Agency, *National Preparedness Goal* (Department of Homeland Security, 2019), 29, accessed 19 January 2020, [https://www.fema.gov/media-library-data/1443799615171-2aae90be55041740f97e8532fc680d40/National\\_Preparedness\\_Goal\\_2nd\\_Edition.pdf](https://www.fema.gov/media-library-data/1443799615171-2aae90be55041740f97e8532fc680d40/National_Preparedness_Goal_2nd_Edition.pdf).

## CHAPTER 3

### RESEARCH METHODOLOGY

This thesis uses the qualitative research methodology using case study analysis to compare and contrast the Indonesian models of the Aceh tsunami of 2004 and the 2018 earthquake, tsunami, and liquefaction in Palu-Donggala to the US Katrina hurricane in 2005. The research looks at US and Indonesian government disaster management policies and lessons learned from each disaster to create a better disaster response model. The research will explore cases through in-depth data collection from multiple information sources and reports government documents, online reports, audiovisual material, and observations.<sup>1</sup>

The research will address the primary research question, what are the challenges preventing TNI to conduct disaster response in less than a 24-hour period? In addition, the secondary research questions ask how to integrate agencies other than TNI to form task force response team in a very short time? Does the country have proper policy to conduct integrated national disaster response?

The thesis using qualitative case study because the research involves multiple cases within a bounded system which is government domestic natural disaster response used the military body.<sup>2</sup> The qualitative case study uses extensive and multiple sources to ensure in-depth illustration of the incident.<sup>3</sup> The researcher intended to use logic replication from the collective case study in order to discover ways to bridge the gaps Indonesia Military roles in Disaster Response.

Creswell, in his book, *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*, provided examples of format for qualitative studies.<sup>4</sup> However, he also

stated in the same book that “no format existed.”<sup>5</sup> Therefore, this chapter will explain the research methodology using modified example of Creswell provided sequenced as follows, characteristics of qualitative research, researcher’s role, data collection, , data analysis , validation, expected outcomes, and summary.

### Characteristics of Qualitative Research

There are nine characteristics of qualitative research.<sup>6</sup> In this research, it will emphasis in six of the characteristics. The first of the characteristic is it has multiple sources of data.<sup>7</sup> The researchers collect many forms of data rather than expose to the single source of data. This research collects government documents, records, and journalist reports of the cases and review, then organize it chronologically. Second characteristic is researcher as key instrument.<sup>8</sup> The author collects the data and make interpretation from the information collected and organized. Third is inductive data analysis.<sup>9</sup> The author will conduct an inductive process by build a bottom up design to make an analysis. The fourth characteristic is the research has an emergent design.<sup>10</sup> This means that the study will be modified and may change to target the objective of the study. Fifth, the researchers make an interpretation of what they got from the inquiry.<sup>11</sup> The interpretation comes from the author personal experience and prior understanding. The Sixth characteristic is holistic account.<sup>12</sup> This study will try to make an overarching illustration about disaster management and TNI roles in disaster response in order to solve the TNI gaps and challenges to have a quicker response time.

### Researcher's Role

As mentioned in the characteristics, the author's personal experience and prior understanding will be used in the analysis and interpretation phases. Therefore, it is important to explicitly identify personal biases, values, and background that may shape the analysis.<sup>13</sup>

The author's biases may come from the past experiences prior to this research. The author was born and raised in Indonesia, and experienced numerous earthquakes, volcano eruptions, floods, and other natural disasters. In 2004, the author participated in the Aceh tsunami humanitarian assistance mission, which provides his understanding of the TNI roles in disaster management. Although the mission was not a disaster response, the author experienced the harsh and semi-isolated environment, post disaster. In 2010, the author was involved in the disaster response task force in the Merapi volcanic eruption. The operation provided the basic knowledge for a disaster response task force and its relation to others agencies to conduct a unified effort. Although the author was not deployed in 2018 Palu-Donggala earthquake-tsunami-liquefaction, his unit was assigned to disaster response task force, exposing the author command and control operations. The author was also exposed to the culture of Indonesian Government.

### Data Collection

Miles and Huberman identified four aspects of discussion in qualitative research: the setting, the actors, the events, and the process.<sup>14</sup> The setting for this research is focused on impacted areas in Indonesia and the United States. The US military and TNI will be observed as actors, focusing on procedures taken before, during, and post disaster responses. It will not be limited to leadership decision making. Using qualitative case

study research methodology, this study will focus on the critical events of the 2004 Aceh tsunami, 2005 Hurricane Katrina, and the 2018 earthquake, tsunami, and liquefaction in Palu-Donggala. This includes the system of integration efforts by all the stakeholder. Discussion will focus on the process of how the respective governments conduct large-scale disaster response.

This study uses data sources from the Ike Skeleton Combined Arms Research Library to review previous document research from the Master of Military Art and Science program, School of Advanced Military Study, and additional books discussing natural disaster management. The study also expands the data sources from Indonesian and US government websites to collect existing policy, law, procedures, and other written regulations. Mainstream media websites in respective countries also will be used to build an understanding of events and what stakeholders did to fulfill their responsibilities.

#### Data Analysis

This research will compare and analyze three cases of military involvement with natural disasters. The case studies that will be used are the 2004 Aceh tsunami, 2005 Hurricane Katrina, and 2018 Palu-Donggala earthquake. These cases bounded in a same system which is natural disaster response mission conducted by military inside the country. to understand about the cases, the following paragraph will explain about the overview of each case study.



Figure 2. Map of Aceh

*Source:* Google Maps, “Aceh, Indonesia,” Google, 2020, accessed 14 January 2020. <https://www.google.com/maps/place/Aceh,+Indonesia/@0.549676,95.0572957,4z/data=!4m5!3m4!1s0x30399bdf507cc4bd:0x1039d80b220ca60!8m2!3d4.695135!4d96.7493993>.

Aceh, known as the *Special Province of Aceh*, is the westernmost province of Indonesia, located in the Indian Ocean on the island of Sumatra. On its eastern coast is the Malacca Strait, one of the busiest waterways in the world because of its location connecting the Indian and Pacific Oceans. According to the Indonesia Central Statistical Agency (BPS), the capital city of Banda Aceh had a population of 239,146 citizens before the 2004 tsunami disaster.<sup>15</sup> Aceh is a province governed by a governor and consists of twenty-three cities and regency.<sup>16</sup> Because of the Indonesian defense policy “Defensive Active,” Indonesia has several territorial military divisions called KODAM. The KODAM Iskandar Muda is located in the Aceh province and consists of four subordinate KOREM units.

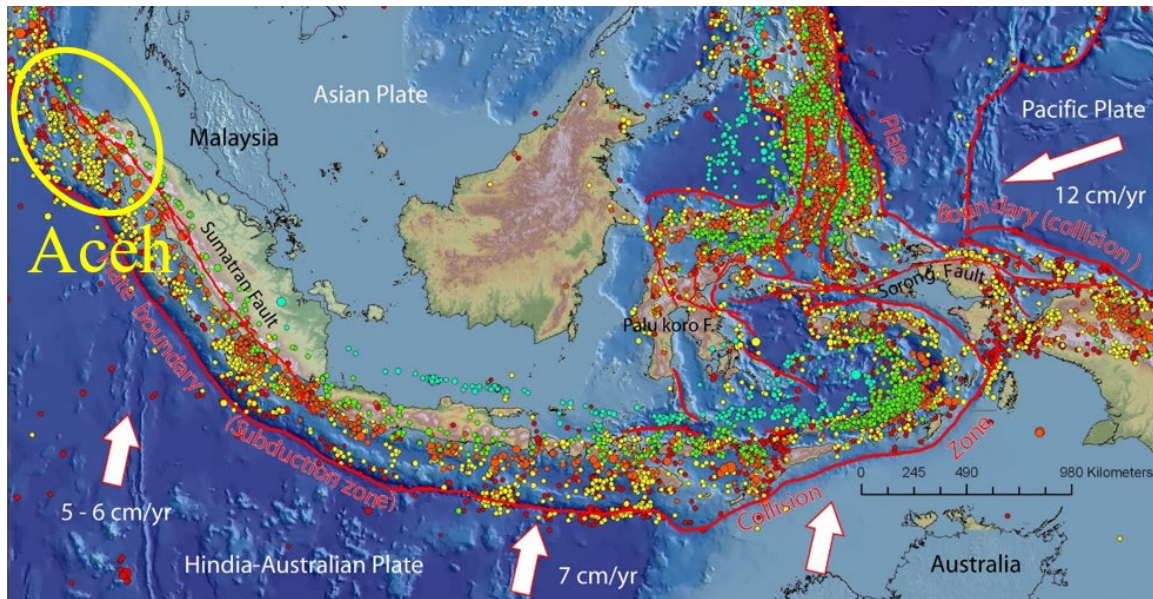


Figure 3. Ring of Fire

*Source:* Sutopo Nugroho, “Indonesian Geography: Blessing and disaster?” (lecture, Panel Discussion Indonesia National Defense Agency-Lemhannas LIX, Jakarta, Indonesia, 8 May 2019), 17.

The island of Sumatra, where Aceh is located, is geographically directly located where the Indo-Australian and Eurasian tectonic plates meet. Based on this location, it has high potential risk of earthquakes and tsunamis, although Aceh did not have any previous big natural disasters that caused many fatalities.

The disaster started at 07:59, local time, 26 December 2004. An 9.3 Richter scale earthquake, 20-25 kilometers from the shore shook southwestern Sumatra. A few moments later, a large tsunami struck Aceh, Khao Lak Thailand, Sri Lanka, and India.<sup>17</sup> On 27 December 2004, UN declared the Aceh tsunami as the biggest humanitarian disaster that ever happened.<sup>18</sup> On 30 December, UN Secretary General Kohfi Annan stated at least 115,000 fatalities had occurred.<sup>19</sup> Germany sent military aircraft and an emergency medical clinic to the impacted area. On 1 January 2005, the US aircraft carrier

USS Lincoln arrived along the Sumatran coastline to give humanitarian aid.<sup>20</sup> In the result of the disaster, the Indonesia government data stated there were 283,100 total fatalities, 14,100 missing, and 1,126,900 displaced.<sup>21</sup>

The Indonesian government learned a lot about disaster management from this catastrophe. This was the start of many Indonesia policy changes, infrastructure development plans, and better government interagency relations. A year after the disaster, the President issued Executive Order No. 83/2005 that gave the Bakornas PB (National Coordinating Agency in Disaster Management), the predecessor of BNPB, more authority and detailed responsibility to coordinate and practice national disaster management.<sup>22</sup> This is a perfect case to study because this was a major disaster that shaped Indonesia's opinion and policy about natural disaster.

A day before Hurricane Katrina struck US soil, the National Hurricane Center broadcasted a storm warning. The forecast predicted the storm surge flooding of three feet above normal tide levels.<sup>23</sup> Hurricane Katrina made landfall on Florida on 25 August 2005 as a Category 1 storm, and Florida Governor Jeb Bush declared a state of emergency.<sup>24</sup> The next day, Louisiana Governor Kathleen Blanco declared a state of emergency when the hurricane reached Louisiana, and deployed the National Guard.<sup>25</sup> On 28 August 2005, the storm escalated becoming a Category 5 storm with winds of 160 miles per hour.<sup>26</sup> Cities from New Orleans throughout Biloxi Mississippi, experienced severe damage.<sup>27</sup>

Hurricane Katrina destroyed an estimated three hundred thousand houses, displaced over 770,000 people, and killed an estimated 1,330 people.<sup>28</sup> Hurricane Katrina is a good fit for this research because it was considered as one of the deadliest hurricanes

in US history.<sup>29</sup> The response from the military organizations also make this disaster response comparable to other case studies.

Sulawesi is the fifth largest island in Indonesia.<sup>30</sup> It is located in between Borneo Island and Moluccas archipelago. The island is divided to six provincial administrations. In the Indonesian government structure, the provincial administration consists of several “Kabupaten” (Regency) and “Kotamadya” (City). Palu City is located in the Province of Central Sulawesi, located at the end of Palu Bay in the Makassar Strait. The Palu suburb area is Donggala regency administration. Donggala surrounds the city of Palu in the bay area. According to the Palu City administration, the Indonesia Central Statistical Agency (BPS) official website, in 2016 the Palu City population is 374,000 and Donggala Regency population is 296,400.<sup>31</sup> Central Sulawesi, where the Palu and Donggala located, is under the territorial military division, KODAM XIII/Merdeka, along with the province of North Sulawesi and Gorontalo.

KODAM XIII/Merdeka location is in Manado City, North Sulawesi Province. It has North Sulawesi province, Gorontalo Province, and Central Sulawesi as area of responsibility. This area command is relatively new because it was just reactivated in 2016. Prior the reactivation, the area of responsibilities was under the authority of KODAM VII/Wirabuana, now KODAM XIV/Hasanuddin. Consequentially, when the earthquake struck, many of its subunits were still in hollow structures, waiting for new recruits and personnel transfers from other commands.

Figure 3 depicts the island of Sulawesi, geographically located where the Indo-Australian and Eurasian tectonic plates meet, which is subject to a high risk of earthquake and tsunami in the Makassar strait. Research conducted by the Indonesia Geology

Agency in 2012 indicates that Palu and its vicinity has a very high risk of liquefaction.<sup>32</sup> Folklore in Palu describes mud that swallowed everything on the surface after a big earthquake, called *Nalodo*, providing evidence that liquefaction has happened before in Palu.<sup>33</sup>

On 28 September 2018, Palu-Donggala was shaken thirteen times by earthquakes in a day.<sup>34</sup> The first earthquake struck at 14:00, local time, and resulted in one death, ten injured, and dozens of damaged housing in the Donggala regency.<sup>35</sup> Another higher magnitude earthquake occurred at 17:02, , measuring 7.4 on the Richter Scale. At 18:02, the land suddenly turned to liquid mud, destroying everything on the surface. A six-meter high tsunami then hit Palu-Donggala, and aftershocks continued until midnight.

The Head of Data, Information and Public Relations Center at BNPB, Sutopo Nugroho, stated the disaster claimed 2,010 lives in total.<sup>36</sup> However, this disaster was never declared as a national disaster by the central government. This case is important to the study because it is the most recent disaster, costing many Indonesian lives. The efforts conducted to address the situation can be seen as representative of the implementation of new policies by the Indonesia government, post-2004 Aceh tsunami.

The analysis framework compares and contrasts the above three described cases using variables from response mission area core capabilities and preliminary targets of US national preparedness goals in response missions. Data analysis will be based on variables contained in the comparison matrix below using cross-case synthesis.<sup>37</sup>

Table 4. Case Study Comparison Matrix			
Variable list	2004 Tsunami Aceh	2005 Hurricane Katrina	2018 Earthquake, Tsunami, Liquefaction Palu-Donggala
Operational coordination			
Mass care services			
Mass Search and Rescue operations			
On-scene Security, Protection, and Law Enforcement			
Operational communication			

*Source:* Created by author.

### Validation

All data will be verified using the following procedures to ensure this study contains valid and authentic information.

1. Triangulation.<sup>38</sup> The information will be crosschecked with multiple data sources. The researcher will use different sources, methods, and theories to justify the initial information used.<sup>39</sup>
2. Peer-review.<sup>40</sup> The study will be reviewed by MMAS students from US Army and another country to play the devil’s advocate role to keep the study credible.
3. Clarifying the bias.<sup>41</sup> In the subchapter, “Researcher’s Role,” the author indicated past experiences, values, and personal background to clarify biases that may drive the assumption in the research.
4. Present negative or discrepant information.<sup>42</sup> The author will ensure the study has overarching perspective. Presenting contradictory information will make the study more accurate.<sup>43</sup>

5. External audits..<sup>44</sup> Independent auditor will look over the study to enhance the validity of the overall research..<sup>45</sup>

#### Expected Outcomes

The data collection and analysis processes will conclude whether the challenge to provide a response time in less than 24 hours results from government policy or other variables. This research methodology also expected to discover new approaches to improve TNI roles in conducting domestic disaster response.

#### Summary

This chapter explains how the research of TNI roles in disaster response will be conducted to answer the research questions using the qualitative case study method. The study will compare the 2004 Aceh and 2018 Palu Donggala earthquake and tsunami with the 2005 Hurricane Katrina. The analysis will be recorded in the matrix provided by the author.

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<sup>1</sup> John W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 3rd ed. (Thousand Oaks, CA: Sage Publications, 2009), 73.

<sup>2</sup> John W. Creswell, *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*, 2nd ed. (Thousand Oaks, CA: Sage Publications, 2007), 73.

<sup>3</sup> Ibid., 93.

<sup>4</sup> Ibid., 47.

<sup>5</sup> Ibid., 47.

<sup>6</sup> Ibid., 175.

<sup>7</sup> Ibid., 175.

<sup>8</sup> Creswell, *Qualitative Inquiry and Research Design*, 175.

<sup>9</sup> Ibid., 175.

<sup>10</sup> Ibid., 175.

<sup>11</sup> Ibid., 176.

<sup>12</sup> Ibid., 175.

<sup>13</sup> Creswell, *Research Design*, 177.

<sup>14</sup> Matthew Miles and Michael Huberman, *Qualitative Data Analysis: Sourcebook of New Methods* (Thousand Oaks, CA: Sage Publications, 1994), 41-44, quoted in John W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 3rd ed. (Thousand Oaks, CA: Sage Publications, 2009), 178.

<sup>15</sup> Ahmad Arif, "Jejak Keberulangan Tsunami di Aceh [Tsunami Repeats in Aceh], Kompas, 23 December 2014, accessed 12 January 2020, <https://sains.kompas.com/read/2014/12/23/15591981/Jejak.Keberulangan.Tsunami.di.Aceh?page=all> date accessed 8 Jan 2020.

<sup>16</sup> Pemerintah, "Kabupaten Kota di Provinsi Aceh [City District in Aceh Province]," Pemerintah.net, 2020, accessed 12 January 2020, <https://pemerintah.net/kabupaten-kota-di-provinsi-aceh/>.

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<sup>19</sup> Ibid., 26.

<sup>20</sup> Ibid., 26.

<sup>21</sup> Urip Setiyono, Indra Gunawan, Priyobudi, Yatimantoro, Hidayanti, Septa Anggraini, Resty Herdiani Rahayu, Debi Safari Yogaswara, Musa Julius, Mila Apriyani, Muhamad Harvan, and Gloria Simangunsong, *Katalog Gempabumi Signifikan Dan Merusak, 1821-2017* [Climatology and Geophysics, Catalog of Significant and Damaging Earthquakes, 1821-2017], no. 2 (Kemayoran, Jakarta: Indonesian Meteorological Climatology and Geophysics Agency, January 2018), 98, accessed 12 January 2020, <https://cdn.bmkg.go.id/Web/Gempa-Signifikan-dan-Merusak-Per-Tahun-1821-2017.pdf>.

<sup>22</sup> Executive Order no. 8/2005 (2005), 2, accessed 12 January 2020, <https://bnpb.go.id/uploads/migration/pubs/8.pdf>.

<sup>23</sup> National Hurricane Center and Central Pacific Hurricane Center, “Tropical Storm KATRINA,” 2005, accessed 14 January 2020, <https://www.nhc.noaa.gov/archive/2005/pub/al122005.public.004.shtml>.

<sup>24</sup> WFAA-TV, “Timeline: Hurricane Katrina and the aftermath,” 28 August 2015, accessed 14 January 2020, <https://www.wfaa.com/article/news/nation/timeline-hurricane-katrina-and-the-aftermath/287-142230560>.

<sup>25</sup> Ibid..

<sup>26</sup> Ibid..

<sup>27</sup> Cable Network News, “Hurricane Katrina Statistics Fast Facts,” updated 30 October 2019, accessed 14 January 2020, <https://www.cnn.com/2013/08/23/us/hurricane-katrina-statistics-fast-facts/index.html>.

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<sup>29</sup> Davis, *Hurricane Katrina*, 4.

<sup>30</sup> Central Sulawesi Provincial Government, “Sekilas Sulteng [Central Sulawesi at a glance],” 15 January 2020, accessed 23 December 2019, <https://www.sultengprov.go.id/pagesc/2/sekilas-sulteng>.

<sup>31</sup> Palu City Statistics Agency, “Jumlah Penduduk Menurut Kabupaten/Kota di Provinsi Sulawesi Tengah (ribu), 2012–2016 [Total Population by Regency/City in Central Sulawesi Province (thousand), 2012-2016],” 13 June 2017, accessed 15 January 2020, <https://palukota.bps.go.id/statictable/2017/06/13/599/jumlah-penduduk-menurut-kabupaten-kota-di-provinsi-sulawesi-tengah-ribu-2012-2016.html>.

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<sup>34</sup> Eka Yudha Saputra, “Setahun Gempa Palu, Warga Cerita Detik-detik Likuifaksi [One Year After Palu Earthquake, Residents’ Story of Seconds of Liquidation],” *Kelompok Tempo Media*, 19 September 2019, accessed 15 January 2020, <https://dunia.tempo.co/read/1249607/setahun-gempa-palu-warga-cerita-detik-detik-likuifaksi>.

<sup>35</sup> Saputra ““Setahun Gempa Palu.””

<sup>36</sup> British Broadcasting Corporation Indonesia, “Gempa tsunami Palu Donggala: Korban tewas menjadi 2.010 orang, relawan asing ‘diusir’ [Palu Donggala tsunami earthquake: 2,010 fatalities, foreign volunteers ‘expelled’],” 9 October 2018, accessed 15 January 2020, <https://www.bbc.com/indonesia/indonesia-45795653>.

<sup>37</sup> Creswell, *Qualitative Inquiry and Research Design*, 163

<sup>38</sup> *Ibid.*, 208.

<sup>39</sup> Miles and Huberman, *Handbook of Qualitative Research*, 428-444, quoted in Creswell, *Qualitative Inquiry and Research Design*, 208.

<sup>40</sup> Creswell, *Qualitative Inquiry and Research Design*, 208.

<sup>41</sup> *Ibid.*, 208.

<sup>42</sup> Creswell, *Research Design*, 192.

<sup>43</sup> *Ibid.*, 192.

<sup>44</sup> Creswell, *Qualitative Inquiry and Research Design*, 209.

<sup>45</sup> Creswell, *Research Design*, 192.

## CHAPTER 4

### ANALYSIS

The research purpose is to discover gaps in the deployment of the TNI as a quick response task force to natural disasters in Indonesia. Therefore, the analysis chapter will conduct a holistic comparison of variables from three cases of military involvement in disaster response and then ties the findings to the research questions. The primary research question for this thesis is “what are the challenges preventing TNI to conduct disaster response in less than 24-hours?” The secondary research questions are “How to integrate agencies other than TNI to form task force response team in a very short time? Does the country have proper policy to conduct integrated national disaster response?”

The comparison will be based on variables picked from US national preparedness goals in the response phase. It will emphasize how the variables influence the efficacy of the military body response in each case to identify the challenges to conducting disaster response operations. It also will compare types of responses are conducted to understand the effectivity of the approach. Lastly, this chapter will analyze the patterns showed between cases in order to answer the research questions.

It is important to understand the variable definitions because, without it, the data presented will be too broad to be studied. The comparable variables are operational coordination; mass care services; mass search, and rescue operation; on-scene security, protection, and law enforcement; and operational communication.

Operational coordination is the response team’s actions required to establish and maintain a unified and coordinated operational structure and process that appropriately integrates all critical stakeholders and supports the execution of core capabilities.<sup>1</sup> Which

means, analysis on this variable will focus on effectivity establishing the command and control center and implementation of coordination structures with all the stakeholders in the area impacted.

Mass care services provides life-sustaining and human services to the affected population, to include hydration, feeding, sheltering, temporary housing, evacuee support, reunification, and distribution of emergency supplies.<sup>2</sup> The analysis of this variable is based on the response time of the task forces providing those services to the impacted population.

Mass search and rescue operations is the actions required by the response team to deliver traditional and atypical search and rescue capabilities, including personnel, services, animals, and assets to survivors in need with the goal of saving the most endangered lives in the shortest time possible.<sup>3</sup> The analysis on this variable focuses on the effectivity of the search and rescue operations in time, space, and results. The search and rescue operation are related to the second variable because it depends on the integration efforts from all the agencies to reinforce the military task force.

On-scene security, protection, and law enforcement ensures a safe and secure environment through law enforcement and related security and protection operations for people and communities located within affected areas, and also for response personnel engaged in lifesaving and life-sustaining operations.<sup>4</sup> This variable compares the role of military to reestablish the social order in the affected areas and reduce further damage to the environment.

Operational communication ensures the capacity for timely communications in support of security, situational awareness, and operations by any and all means available

among and between affected communities in the impact area and all response forces.<sup>5</sup> This variable will compare efforts to ensure communication channels supporting integration among the response forces. This variable will also compare how quickly communication is reestablished in affected areas to optimize command and control and public communication.

#### Aceh Tsunami 2004

The Indian Ocean Tsunami of 2004 that hit Aceh Province was the greatest disaster response that TNI ever conducted. TNI was overwhelmed with the enormous scale of the disaster. The tsunami disaster relief operation was conducted while the province was still under a state of civil emergency. Thus, the TNI was in the front line because most of the stakeholders' belief it would endangering their safety. It was the critical point that became the corner stone of disaster awareness in the country. It also identified natural disaster as common enemy of Indonesia to bring peace in Aceh Province conflict that started in 1976 and ended in 2005.

The Indonesia's performance in conducting humanitarian operation is analyzed using operational coordination, mass care services, mass search and rescue operation, on-scene security, protection and law enforcement and operational communication variables.

Operational coordination in the Indonesia disaster relief starts from National Coordinating Body for Disaster Management/Bakornas PBP as a coordinator because on 26 December 2004, night after the tsunami struck, Susilo Bambang Yudhoyono Indonesia president declared it as National Disaster.<sup>6</sup> Therefore, the Bakornas PBP is coordinates the response effort, including assets and enforcement power during a disaster. It has authority to manage the 20,000 TNI personnel who were already in the area that

just redeployed for humanitarian assistance.<sup>7</sup> In practice, it had neither assets nor implementation of enforcement powers.<sup>8</sup> It also had a confusing command and control structure with executive provincial disaster management/Satkorlak PBP. Witnesses report that airplanes tossed out aid supplies wherever they could and took off immediately because no one seemed to be in charge at the province's airport.<sup>9</sup>

The operational coordination variable in 2004 Aceh Tsunami was influenced by a weak legal framework, Executive Order 3, 2001, that resulted in a confusing command and control structure. Executive Order 3 stated that one of the roles of Bakornas PBP is to coordinate the execution of disaster management while also stating that Satkorlak PBP is the executor of disaster management in the respective region with regard to Bakornas PBP policy and technical direction.<sup>10</sup> This legal framework gives the authority for command and control of the operational coordination of the agencies to Satkorlak PBP. In practice, it confused the lines between coordination and authority when the lead organization, Satkorlak PBP, claimed Aceh Satkorlak PBP under its authority at the same time as Bakornas PBP.<sup>11</sup> Adding to the confusion, the neighboring province (North Sumatra Province), Medan Satkorlak PBP in Aceh was also activated and claimed authority in the affected area.

The scale of the disaster destroyed any solid structure in the area in the 2004 Aceh tsunami affecting the ability to provide mass care services. TNI and stakeholders tried to use any structural remains and military and Red Cross tents available to establish temporary shelters. The camps established modularly, based on the numbers of refugees and the area's availability to essential needs, such as fresh water. The problem with the type of modular used instead of huge centralized camps was tracking the total number of

refugees in a camp, the location of the camp, and what were the essential basic and medical needs. This occurred because the communication lines were destroyed and the command structure reports were unreliable due to duplication of the area of responsibility.<sup>12</sup> The condition of the roads to supply of basic needs and stability in the affected area also added barriers to achieve ideal mass care services in each refugee camp.

In the 2004 Aceh tsunami, there were no centralized mass search and rescue operations conducted by a single task force. The TNI task force coordinated by the KOREM and KODIM in their respective territories. The TNI unit performed search and rescue operation and other operations, such as establishing temporary refugee shelters. TNI was not the only government agency with search and rescue capability. Basarnas is a national search and rescue agency that also conducted the operation; however, its movement was restricted due to security conditions against the separatist Aceh Freedom Movement. TNI's commitment to the dual operations of search and rescue as well as providing temporary shelter did not allow it to concentrate efforts to either one of the missions because in the devastation phase, shelter and SAR are important.

The Aceh province police were overwhelmed by the scale of the disaster, and many of its offices and personnel were declared missing or dead. Therefore, TNI also had to support the Aceh police force to perform on-scene security, protection, and law enforcement. However, implementation of this variable was not as challenging as other variables because the TNI already played an important role in Aceh before the tsunami due to the security issue with the separatist movement.

The operational communication variable in this case was challenged by the fact that the earthquake followed by a tsunami destroyed the communication networks and affected even the satellite systems.<sup>13</sup> Power lines and telecommunication networks were destroyed and could not be used. Moreover, many local officials and offices were swept away by the huge tsunami. The devastation of communication networks affected the disaster relief effort. Air controllers could not use the conventional communication network to control the airport runways used to drop off the logistics.

Given the condition of no communication networks, TNI responders and international agencies had to establish their own communication lines to have proper operational communication before conducting essential operations, such as search and rescue. The lack of communication network capabilities affected the quality of intelligence in collecting information from deep inside the area of operation.

#### Katrina Hurricane 2005

Katrina Hurricane was one of the disasters that brought the United States to overcome the impacts on the population of New Orleans. Although, there were many gaps and criticism, the U.S. military response to the crisis was outstanding. According to the *Strategy for Homeland Defense and Civil Support*, published only two months prior to Hurricane Katrina, the use of Total Force, including active duty forces, US Army Reserves, and National Guard is needed as a counter measure to manmade or natural disasters. It executed operations with limited and outdated Army framework, and thus it had to make refinements to make the operation better.<sup>14</sup> However, this imperfect disaster response had many variables that can be dissected and taken as a lesson learned. The

following paragraph will break down each variable that influenced the total force performance in the Katrina response.

In optimizing the operational coordination on Katrina response, the nation must integrate the Total Force under the operational structure. Three components of US Army, the active duty, Reserves, and National Guard, at that moment their status has several restrictions. The active duty forces under Title 10 can only support the state when it requests assistance through the Federal Emergency Management Agency (FEMA). The second component of the Total Force, the Reserves have limited capabilities in conducting civil support operations. Since the Reserves were on active duty status during the Katrina operation, it operated under the Joint Task Force Katrina with the active duty forces. The third component, the National Guard was in a Title 32 status or state active duty, but the operational cost came from the Federal Government because they were conducting missions supporting the Federal Government.<sup>15</sup>

During the Katrina operation, the National Guard from several states were activated on state active duty orders but remained under the command of their respective governors; operational control shifted to the Governor of the state to which they deployed.<sup>16</sup> The national guard command established several task forces that consisted of several functional task forces based on each specialty. For example, the Mississippi National Guard established Task Force Cyclone under Major General Vadnais's command that consisted of Task Forces Quick, Lee, Engineer, Defender, Wright, Keifer, and Aviation. In the broader picture, the Katrina operation consisted of many task forces with various capabilities under the coordination of their respective governors. The flexibility made the disaster response more adaptable to the dynamic situation to perform

a wide range of missions without any proper training and rehearsal although there were many difficulties reported caused by deficiencies in command and control structure.<sup>17</sup>

In providing mass care services, initially Louisiana authorities designated the Superdome sports stadium as a shelter to provide food, power, toilets, and medical support to the survivors. It also facilitated a logistic and supply chain to distribute provisions. Regardless the Superdome's potential to support mass care services, most of the systems failed when the storm hit it on 29 August 2005. Approximately twelve thousand people were endangered when power was lost and the huge roof of the dome was in risk of collapsing.<sup>18</sup> In spite of various challenges, the National Guard distributed need supplies to the Superdome. With the supply route cut off by the flood, Army helicopters discovered several trailers of reported lost Meals Ready To Eat (MRE) on 31 August 2005 and supplied them to the Superdome shelter.



search and rescue actions. Nevertheless, in the pre-execution phase, the Louisiana National Guard faced several challenges to deploy maximum strength of their personnel because there were soldiers overseas in Iraq at that same time. The task forces' lack of situational awareness was worsened by the lack intelligence on the storm's widespread destruction.

Providing on-scene security, protection, and law enforcement was essential in days after the hurricane struck to protect lives, control crime, and secure hazardous areas. Active duty forces come under the *Posse Comitatus Act 1878* that restricts them to performing law enforcement activities. The National Guard is much different because its status in Katrina Response was under Title 32 and does not fall under the *Posse Comitatus Act 1878*. In this situation, the National Guard had more privilege and assisted the law enforcement during the relief operation. In both states, the task forces had designated a subtask force that consisted of military police to conduct security, protection, and law enforcement. Nevertheless, the situation was already bad before the task forces could reach hotspots to prevent looting from a desperate population.<sup>20</sup>

The US military faced challenges to provide operational communication throughout the Katrina operation. Due to the different status of the Total Force components, the communication network had to separate between active-duty and National Guard which affected the speed and effectiveness of the response.<sup>21</sup> In the search and rescue, evacuation, and supply delivery missions, there were no unified command and control system during the operations.<sup>22</sup> The overwhelming task affected many aircraft and helicopter operations in conducting rescues. Formal direction is necessary to direct the evacuation assets and priorities, and where to take those rescued.

Another example in operational communication variables was when TF Cyclone tried to communicate with its subtask forces. It faced difficulties because many National Guard units did not have enough radios because most were deployed in Iraq, and many of the civilian communications systems were out of service.<sup>23</sup> The situation caused the subtask forces to execute the mission based on commanders' intent instead of formal direction from higher headquarters.

### Palu-Donggala Earthquake 2018

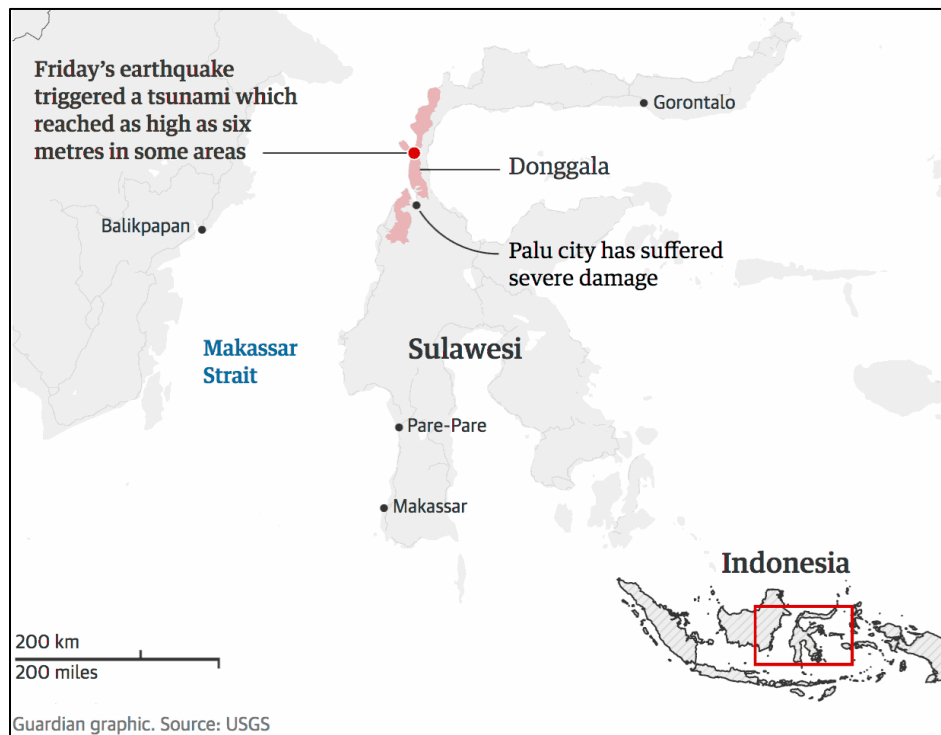


Figure 5. 2018 Palu-Donggala map

Source: Artemis, "Sulawesi, Indonesia earthquake & tsunami highlight risk transfer gap," 1 October 2018, accessed 31 March 2020. <https://www.artemis.bm/news/sulawesi-indonesia-earthquake-tsunami-highlight-risk-transfer-gap/>.

In 2018, Indonesia was again rocked by another big natural disaster. Central Sulawesi was struck by an earthquake, followed by tsunami and liquefaction. Sulawesi is one of five big islands in Indonesia, therefore, the infrastructure in the island was adequate compared to other provinces beyond the island of Java. its capital, Palu, was the most developed city in the province. Just like most of the province in the Indonesia, almost all of the province-level agencies are located in Palu, except the Army Territorial Division/KODAM located in a different province because it covers North and Central Sulawesi. When the disaster struck, it paralyzed the provincial government and affected the operational coordination, mass care services, mass search and rescue operations, on-scene security, protection and law enforcement, and operational communication.

In operational coordination, the Indonesia government efforts to establish unified and coordinated operational structure started with a declaration the state of emergency level so the BNPB could designate an organizational office as the leading agency. In this case, the Indonesia Government never declared the 2018 Tsunami Palu as national state emergency, therefore the BNPB at the province level and all agencies under the Central Sulawesi Province responded as the lead in the respective sector and the governor as the main coordinator.<sup>24</sup> The operational structure under the governor made the response organization only permitted to employ agencies in the province. It had to request to the army to get assistance in the organization due to the TNI position is directly under the president. The central government's decision not to declare a national state emergency affected the government response to provide mass care services for the refugees. One of the difficulties was the distribution of the food and other essential needs.<sup>25</sup> The task force had limited capability to collect and distribute internal and external humanitarian aid due

to its limited strength. Many collection points in South Sulawesi Province waited for too long for distribution because of inadequate transportation to Central Sulawesi, owing to the fact it lacked higher approval to use military equipment, such as trucks to deliver the aid.

Although President Joko Widodo did not mobilize TNI and police force to conduct mass search and rescue operations on 1 October 2018, between 29 September to 1 October 2018, the TNI and Basarnas conducted limited search and rescue efforts because the TNI stationed in Palu and vicinity suffered from the disaster.<sup>26</sup> It took time to bring in TNI with their heavy equipment from outside the area, because the conditions and debris would not allow large movement of land transportation. However, the TNI task force, Police, Basarnas, and Indonesia Red Cross (PMI) managed to conduct search and rescue using equipment on hand. But because the situation was never stated as national emergency, the neighboring KODAM had to await central government permission to deploy, which meant the heavy equipment needed for search and rescue had to wait for orders from higher headquarters.

The TNI and police force were the main components of the task force to provide on-scene security, protection, and law enforcement. For instance, one battalion from 3rd ID KOSTRAD was designated to perform security operation to secure the supply route from the south to the city of Palu. The situation in the supply route prior the 3rd ID deployment was chaotic. Many reports showed non military trucks transporting humanitarian aid was looted along the way to Palu.<sup>27</sup> One possible reason for it could have been because the affected population was desperate for life-sustaining aid. The first earthquake and resulting tsunami and liquification struck on 28 September 2018, but the

security task force was on the scene on 2 October 2018.<sup>28</sup> The time-consuming procedure of waiting for the order to deploy caused this delay. The unit was ready the day after the event but was forced to wait at the home base for clearance from Army headquarters because the deployment was outside the area of responsibility.

The extent of infrastructure devastation suppressed the implementation of established operational communication to support command and control across the area of operation.<sup>29</sup> The task force had to establish its own communication network in order to have timely communication. The TNI task force had to establish its own radio repeater to enable the internal network communication. Although there was no intra-agency radio communication line, the task force used commercial voice and data communications that had been restored after the disaster. The response team faced difficulties during the blackout period to assess the real time situation to reach areas that needed help most.<sup>30</sup> An integrated communication intra-agency would have better assisted the operational communication.

In addition to the Palu-Donggala disaster timeline, earthquakes also struck the Lombok island province of Nusa Tenggara Barat on 28 July and 5 August 2018. The scale of the disaster was not as big as the Palu-Donggala disaster, but in September 2018, engineer units from South Sulawesi were deployed to conduct reconstruction in Lombok which reduced the response from Kodam XIV/Hasanuddin in South Sulawesi to support the Palu-Donggala. The engineer units that deployed to Lombok were then recalled and reassigned to support the disaster response operation in Palu-Donggala.

## Findings

The data findings are summarized in the case study comparison matrix below to figure the patterns and relationship between cases. It is the foundation of the analysis in order to answer the research questions.

Table 5. 2004 Tsunami Aceh		
Variable list	Findings	
Operational coordination	<ul style="list-style-type: none"><li>- Created confusion command and control structure between central and local government assets.</li><li>- President declared national state disaster less than 24 hours, automatically activated Bakornas PBP.</li></ul>	
Mass Care Services	<ul style="list-style-type: none"><li>- The task force still able to provide limited mass care services.</li><li>- There was duplication of area of responsibility.</li></ul>	
Mass Search and Rescue operations	<ul style="list-style-type: none"><li>- No unified task force for mass search and rescue operation.</li><li>- TNI managed to conduct dual operations SAR and provide mass care services.</li></ul>	
On-scene Security, Protection, and Law Enforcement	<ul style="list-style-type: none"><li>- TNI provided security, and protection.</li></ul>	
Operational communication	<ul style="list-style-type: none"><li>- TNI responders and other agencies established their own communication network.</li><li>- No integrated communication.</li></ul>	

Source: Created by author.

Table 6. 2005 Katrina Hurricane		
Variable list	Findings	
Operational coordination	<ul style="list-style-type: none"> <li>- Decentralized command and control under respective governor.</li> <li>- Each Governor establish task forces for different task and purpose.</li> <li>- No unified command control between National Guard and Active Duty.</li> </ul>	
Mass Care Services	<ul style="list-style-type: none"> <li>- Provide superdome as a shelter, but the outcome was not as good as they expected.</li> <li>- Could provide food from MRE that they “accidentally” found.</li> </ul>	
Mass Search and Rescue operations	<ul style="list-style-type: none"> <li>- Each governor designated task force for search and rescue only.</li> <li>- The task force was ready to execute right after the declaration state of emergency.</li> </ul>	
On-scene Security, Protection, and Law Enforcement	<ul style="list-style-type: none"> <li>- respective governor designated sub task force that provide on scene security and protection.</li> <li>- The task force was ready in the early stage of state emergency.</li> </ul>	
Operational communication	<ul style="list-style-type: none"> <li>- Separated communication network because different status of the total force components.</li> <li>- To solve the deficiency of radio communications, units from different component cannot cover each other.</li> </ul>	

Source: Created by author.

Table 7. 2018 Tsunami Palu-Donggala		
Variable list	Findings	
Operational coordination	<ul style="list-style-type: none"> <li>- Not a national emergency, which means Governor had the authority as coordinator.</li> <li>- Faced difficulties when governor needed more troops and equipment from TNI.</li> </ul>	
Mass Care Services	<ul style="list-style-type: none"> <li>- Task force had limited capability to collect and distribute.</li> <li>- Did not have flexibility to use assets from other provinces.</li> </ul>	
Mass Search and Rescue operations	<ul style="list-style-type: none"> <li>- The task force established on 1 Oct 2018.</li> <li>- Did not have many heavy equipment to conduct the operation.</li> </ul>	
On-scene Security, Protection, and Law Enforcement	<ul style="list-style-type: none"> <li>- TNI covered the security and protection.</li> <li>- Security task force managed to be on scene on 2 October 2018</li> <li>- Police covered law enforcement.</li> </ul>	
Operational communication	<ul style="list-style-type: none"> <li>- Decentralized communication network.</li> <li>- Used internal and commercial communication assets.</li> </ul>	

Source: Author

### Data Analysis

There were positive and negative findings from the three cases selected for this study to use as data to determine gaps in TNI deployments to natural disasters in Indonesia. The 2004 Aceh Tsunami is the example of Indonesia's response to a large-scale natural disaster. The 2005 Katrina case represents the US model of a natural disaster response with a scale similar to the 2004 Aceh Tsunami. The 2018 Palu-Donggala Earthquake, Tsunami, and Liquefaction represents current Indonesia policy to response natural disaster and the TNI deployment the as a quick response team.

The data analysis used the three cases to determine which cases had the best response time and what challenges TNI faces to perform deployments with less than a 24-hour response time. It will analyze the best way to integrate TNI with other agencies to

form a task force. Finally, it will determine policies that Indonesia needs to alter to optimize the use of TNI for natural disaster response.

Of the three cases, the 2005 Katrina Hurricane response had the quickest response. Although the performed variables still had many things to improve upon, the US military components proved that the framework they use to answer the calling was adequate. In 2004 Tsunami Aceh, TNI accomplished the response in less than 24-hours and sent 20,000 personnel to Aceh for disaster response. However, it cannot prove was the Indonesian policy framework adequate for large scale natural disaster because at that moment 40,000 personnel had been there for stability operation against separatist movement. Therefore, in that specific situation the military just needed the declaration of national state disaster to change the mission half of the troops that already there.

In a different situation, the 2018 Palu-Donggala disaster response proved that the current Indonesian policy was not adequate to deploy a large-scale TNI force as a disaster response team in less than 24-hours. Without a declaration of national state of emergency, the local government had to request military assistance for disaster response. according to Executive Order No. 17/2018, the chief of BNPB had authority to conduct disaster response within a certain period of time after first conducting meetings and getting approval from respective coordinating ministry. The order does not detail the extent that BNPB can organize the military to conduct a response. This grey area forces the regional TNI must wait for higher order to deploy its personnel. Executive Order No. 8/2008 describes TNI employment under the coordination of BNPB, but it does not regulate the deployment of additional TNI units from different areas of responsibility to the respective KODAM. In the 2018 Palu Donggala event, the 3rd ID Strategic Reserve

Command had to wait for order from the higher headquarters because the central government failed to declare a national state emergency or not. While the 711st Battalion, the local TNI unit in Palu, was not directly affected by the disaster, it was instead overwhelmed by the local relief effort.

During the Katrina relief effort, state governors could easily deploy the National Guard under their command. In the federal system, governors also had the authority to control and coordinate the task forces, making operational coordination more efficient. This is different from the Indonesian system in which the military are under the control of the central government. The military area command coordinates with the governor, who has the responsibility to respond to the disaster upon request by the local government. For flexibility in the system, Indonesia has a rapid response unit designated to be a responder to the natural disaster based on the national disaster response framework. But if another multiple natural disaster occurred like that in 2018, Indonesia would need to designate at least three teams of SRC PB (West, Center, and East) to cover a country-wide response. Considering the large area of coverage and frequency of natural disaster in Indonesia, it is important to have SRC PB units at the provincial level as the first responders of natural disaster in provinces' area.

From the five chosen variables of the response mission area core capabilities and preliminary targets of the US national preparedness goals, Indonesia experienced challenges to integrate TNI with other agencies. Lack of separation of responsibilities between central and local governments created confusion with operational coordination during the 2004 Aceh Tsunami. New laws were supposed to have accommodate the omissions within the legal framework, but local government had to wait for the central

government to act and mobilize all the resources to conduct humanitarian assistance during the 2018 Palu-Donggala disaster. The US military had better operational coordination implementation in the 2005 Katrina response because the federal system inherently gave authority to the governor to activate the National Guard under specific circumstances. To have more flexibility for military personnel to handle disaster response, Indonesia can give governors limited authority to coordinate local SRC PB of the TNI. SRC PBs attached to the province governments will enable the unit to exercise its command and control procedures.

Integration between TNI and other agencies to provide mass care services was demonstrated during responses to the 2004 Aceh Tsunami and 2018 Palu-Donggala disasters. During the 2004 Tsunami Aceh, TNI and the Indonesia Red Cross established modular refugee camps that provided basic needs temporarily. In 2018 Palu-Donggala, TNI, government agencies, and stakeholders experienced several logistics problems while providing mass care services to different provinces, such as south Sulawesi. TNI and the police were late to secure the logistical supply line from the south Sulawesi to the affected population, which ultimately resulted in looting because of the delayed deployment of 3rd ID strategic reserve that served as the security task force.

The TNI role in search and rescue missions in disaster response are explicitly written in the Indonesia NDRF to “provide search and rescue as requested.” Conducting search and rescue in Indonesia is the domain of Basarnas, but in the special circumstances, including natural disaster response, Basarnas performs integrated mass search and rescue with TNI because it has the capability and more resources. In the 2004 Tsunami disaster response, the integration was not noticeable because the limited

presence of Basarnas at that time. In the 2018 Palu-Donggala disaster, the integration of TNI, Basarnas, and the Indonesia Red Cross was better than expected. The mass search and rescue were expected to be distracted due to the delay of heavy equipment for the operation, but in reality, they conducted the integrated operation with equipment that was on hand. Compared to 2005 Katrina response when the responder mostly dependable on the equipment as force multiplier due to the deployment to Iraq months before.

TNI had more flexibility to provide on-scene protection, security, and limited law enforcement upon request than the US military which is restricted from performing law enforcement activities. In the 2004 Aceh Tsunami, TNI was already integrated with police to conduct counterinsurgent and stability operations in the city. The instability situation prior the tsunami made the integration to provide on-scene protection, security and law enforcement could be presented. In 2018 Palu-Donggala, the local police never requested assistance so the TNI task force only provided on-scene protection and security. The delay to deploy the security task force to secure the logistic line south integrated with other agencies and stakeholders. A lesson learned from the 2005 Katrina Hurricane and 2018 Palu-Donggala Earthquake is on-scene security made the users of logistic lines more secure and convinced that they could deliver aid without risking their own safety.

Integrated operational communications is very important in these three case studies to support coordination of internal and external networks. Communication coverage makes a difference to the mission's success in the execution of large-scale operations. The task force established operational communications in the 2004 Aceh Tsunami. The integration of operational communication between TNI and other agencies

in the same level could be established. The TNI units with responsibility for the refugee camps used an open operational communication network with the Indonesia Red Cross. Similarly, the 2018 Palu-Donggala earthquake operational communication used decentralized communication networks. The different agency response forces employed commercial communication networks. The Indonesia NDRF does not specify the operational communication used but uses organic communication lines while the BNPB as the coordinator is responsible for providing the resources.

From the five variables perspective, Indonesia has appropriate policies to conduct an integrated natural disaster response, but in some areas need to improve to close some gaps. First, Indonesia Law 24, 2007, section 7, subsection 2, requiring government authority to declare disaster levels caused the delay of battalion deployment of the 3rd ID Kostrad in the 2018 Palu-Donggala earthquake. It made the province wait for central government agencies to conduct mass operations. It also made the regional TNI (3rd ID Kostrad and Kodam XIV/Hasanuddin) wait for the order from higher headquarters. A change is needed to better define how much time the central government must take to make a determination, and what local government should do to obtain enough assets and resources to conduct proper action. Stakeholders should know how long to wait and when to take the initiative to conduct proper actions.

Second, NDRF describes the organization of task forces to support the disaster response operation, but in practice, it is difficult to form an integrated task force consisting of multiple agencies. Considering the frequency of disasters in the country, the task forces organization must have more detail depending on the disaster type and size. The organization of the search and rescue task force is comprised of the BNPB/Basarnas

as coordinator with TNI and police as members. The organizational components of a search and rescue task could include one TNI engineer battalion and one battalion of police. Thus, the TNI in a local province could request reinforcement from another area command if it does not have an engineer battalion.

Finally, the country needs regulations for standard operating procedures of task forces so local governments have a legal framework to employ TNI and other central government assets in the area. Currently, TNI conducts national disaster response under the “other than war” task as written in the TNI Law No. 34/2004 as requested by the local government. The employment under a standard operation procedure will shorten the bureaucracy time for a quicker response time with an adequate force.

#### Summary

In summary, current Indonesia government procedures to declare national level state of emergency delays TNI and local government coordinate and form task forces. The 2005 Katrina task forces had a quicker response because the governor had authority to activate the National Guard, whereas Indonesian governors have no military components. For a less than 24-hour response time, Indonesia needs a legal framework to reduce the bureaucracy to deploy the closest military unit including different area command and strategic reserves.

Indonesia needs to have at least three rapid response teams to cover East, Central, and West Indonesia. The provinces also need an integrated response team for a decentralized and quickly integrated response. It was observed from the 2005 Katrina response that task forces organized and deployed quickly after the governor activated

them because the National Guard was already established and the units from other states could be attached to the main body.

Indonesia has laws to conduct national disaster response but needs more detail to establish an integrated disaster response when the government does not declare national disaster. Based on the frequency of natural disasters in Indonesia with variety of scale and type, procedures for TNI and the other agencies response needs more flexibility.

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<sup>3</sup> Ibid., 16.

<sup>4</sup> Ibid., 16.

<sup>5</sup> Ibid., 16.

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<sup>9</sup> Ibid., 88.

<sup>10</sup> Indonesia Executive order 3, 2001 <https://bnpb.go.id/uploads/migration/pubs/11.pdf> accessed 27 March 2020.

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<sup>13</sup> Wiharta et al, *The Effectiveness of Foreign Military Assets*, 88.

<sup>14</sup> James A. Wombwell, *Army Support During the Hurricane Katrina Disaster* (Fort Leavenworth, KS: Combat Studies Institute, 2009), 195-197.

<sup>15</sup> Wombwell, *Army Support During the Hurricane Katrina Disaster*, 18.

<sup>16</sup> *Ibid.*, 18.

<sup>17</sup> Davis, *Hurricane Katrina*, 43.

<sup>18</sup> Wombwell, *Army Support During the Hurricane Katrina Disaster*, 60.

<sup>19</sup> *Ibid.*, 45.

<sup>20</sup> *Ibid.*, 121

<sup>21</sup> Davis, *Hurricane Katrina*, 39.

<sup>22</sup> *Ibid.*, 39.

<sup>23</sup> Wombwell, *Army Support During the Hurricane Katrina Disaster*, 126.

<sup>24</sup> Republic of Indonesia, Law no. 24 (2007), *Penanggulangan Bencana* [Disaster Management], 26 April 2007, accessed 21 December 2019, [https://www.bnpb.go.id/ppid/file/UU\\_24\\_2007.pdf](https://www.bnpb.go.id/ppid/file/UU_24_2007.pdf); Ardito Ramadhan, "Alasan Pemerintah Tak Tetapkan gempa-tsunami Palu sebagai Bencana Nasional [The Government's Reason for Not Establishing the Palu earthquake-tsunami as a National Disaster]," *Kompas Cyber Media*, 30 September 2018, accessed 1 April 2020, <https://megapolitan.kompas.com/read/2018/09/30/17324771/alasan-pemerintah-tak-tetapan-gempa-tsunami-palu-sebagai-bencana>.

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## CHAPTER 5

### CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to discover gaps in the deployment of the TNI as a quick response task force to natural disasters in Indonesia. The study is descriptive in nature and focused on Indonesia's natural disasters, focusing on the tsunami in Aceh in December 2004 and the earthquake followed by a tsunami and liquefaction in Palu in September 2018 in comparison to the 2005 Hurricane Katrina disaster management. The resolve of this study was to find solutions to Indonesian gaps in deployment of the TNI similar to how the US government uses its military component response to natural disaster. This chapter provided conclusions and recommendations based on the discussion in previous chapters. It also provided recommendations for further research that could not be covered by this study because of the limitations and other reasons.

#### Conclusions

Several things that can be concluded from this research. First, it is evident that Katrina response was the quickest of three case studies because the National Guard deployed was under the Governor's authority, so it was easier to mobilize after the activation. It could be done in the US federal system, whereas Indonesia has a different governmental system. The governor as the head of provincial government has no authority to mobilize the military body that belong to the central government. However, the governor has the option to send a request to the central government to obtain military assistance in disaster response.

In the 2004 Aceh Tsunami, the TNI successfully deployed to the area because, coincidentally, there was already a large operation prior to the tsunami, which was different from what happened in 2018 Palu-Donggala. The TNI from 3rd ID Strategic Reserve Command was ready less than 24 hour after the earthquake struck, but the deployment was delayed because it waited authorization in accordance within the legal framework. The research showed the deployment could be faster if there had been a policy that attached TNI unit as a response team under the governor, so it could cut the administration time and give governor more power to perform integrated disaster response efforts.

Based on its NDRF, Indonesia designated SRC-PB to cover the whole territory, but in reality it needs more than one active SRC-PB in a period of time. At least three active SRC-PB units should be prepositioned to cover East, Center, and West areas of Indonesia. It would make the SRC-PB more reliable whenever there is more than one large scale disaster at one time. Also, three prepositioned SRC-PB units to occupy throughout different areas would shorten the time to reach ground zero of the disaster.

In regard to task force integration, the 2005 Katrina military task force organization was under military leadership whereas in the Indonesia NDRF, the task forces consist of multiple agencies. Some of the leading elements are BNPB, which leads multiple agencies including the military and police force. Using multiple agency task forces cause difficulties in integration because it has to integrate up from the lowest level, where the Katrina task forces were integrated at the task force leadership level.

## Recommendations

In order to meet the expected condition of effective roles of the TNI in the disaster response, the Indonesia government needs to alter policies regarding the disaster response management. First, Indonesia Law No. 24/2007 needs revision or additional regulation to limit the decision time between the disaster strike to central government declaration so the respective governor will not hesitate to take further action. It will also quicken KODAM and KOSTRAD planning for humanitarian assistance to the province. Because from this research, it was determined the Indonesia NDRF needs to be revised as one SRC PB unit is not enough to cover all the archipelago. Indonesia needs at least three teams of SRC PB to cover West, Center, and East Indonesia. Those teams need to be ready in prepositioned areas to reduce time of travel to the impacted area to save more lives and conduct disaster response before the situation worsens.

Third, the NDRF needs to be revised and be more specific when it comes TNI unit authority to assist local government in the early of the response phase regardless the limitation of KODAM's area of responsibility. TNI units from different area commands could assist or offer to give assistance to the local government without direction from higher command. This could give TNI unit commanders more initiative to deploy the unit and reduce the administrative procedures. However, this action should be limited to deconflict when too many units in the same area of operation.

Indonesia also needs a policy to establish response teams at the provincial level, it will enable a quicker response time and give the governor power to be the leader of the task forces. Exercising command relationship before a disaster would integrate agencies under governor to work more efficiently.

This research proved that the military body also could be the vital agency in the nation's disaster relief efforts. Therefore, military around the world must understand the importance the military to deploy anytime because the disaster could strike any country in variative scale. A quicker response time could save more lives of its citizens.

#### Areas for Further Research

Because of the limitations of this study, the case studies could not be broken down in all the response mission area core capabilities and preliminary targets of the US National preparedness goals. Further research should include the military roles to support the response core capabilities in planning, public warning information and warning, fatality management services, infrastructure systems, logistics and supply chain management, and situational assessment.

Suggested further research could include the importance of disaster relief skills of TNI soldiers so that BNPB could train TNI few times in a year. The frequency of natural disaster in Indonesia associated with Indonesia Ministry of Defence white paper that mentions natural disaster as a threat, those factors must be implemented in the TNI training cycle which currently is not available. The research may answer how serious TNI to be the front liner of disaster response throughout the archipelago.

Another topic is current task force organization effectiveness when leading task force elements come from the BNPB instead of the majority of personnel in respective task forces are in accordance with Indonesia NDRF. The possible research question could be "what is the implication of BNPB as the chief of search and rescue task force to the TNI, police, and Basarnas as its subordinate units?" This research topic would focus on the command and control model in the task forces where every element belongs to the

central government but serves to support local government. It also needs to answer how the chief of the task force can lead the planning process when it does not have experience in leading the decision-making process in the military, police, and other agencies in the task force.

Additional research could include the effectiveness of the TNI response to non-natural disasters, such as the coronavirus, Covid 19 under the “other than war” task to support local government in social distance policies with police. It could also focus on the command relationship between TNI, police, and governors as the supported body in response of non-natural disaster.

Finally, to expand the research into broader context of disaster relief, further research could discuss TNI roles in the prevention, protection, mitigation, and recovery phase. Those phases represent the preparedness of authority to handle overwhelming disasters occurring in the near future. The military role in every phase could optimize the national preparation against the disaster especially in Indonesia where the national disaster relief coordinating body is undermanned.

### Summary

This research discovered many issues about the Indonesia military roles in disaster response regarding the 2004 Aceh Tsunami and 2018 Palu-Donggala Earthquake. The issues caused by the Indonesia legal framework for disaster response still needs to be improved. In lessons learned from the 2005 Katrina response, where American governors have authority to employ its National Guard to form task forces of disaster response, whereas Indonesia that different system, governors do not possess any military bodies under its authority. The governor has to request for assistance to the central government

in order to get military assistance for disaster response. In consideration of the frequency of natural disasters and the vast area of archipelago, one SRC PB as a standby unit for disaster response is not enough. Indonesia needs to have at least three SRC PB units to cover the West, Center, and East regions of Indonesia. It will reduce time to reach the impacted area and have a quicker response. Mirroring the 2005 Katrina response, Indonesia governors need to possess SRC PB units that consist of TNI and other agencies for conducting disaster response in their respective areas.

This research showed that the military has a great capacity to conduct humanitarian assistance other beyond its primary defense capabilities to its sovereignty. With a good management and framework, the military can enable “other than war” task to save lives from natural disasters.

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