



## Implementation of Military Incident Management System in Disaster Management in Indonesia

Muhammad Amiruddin<sup>1\*</sup>, Herlina Juni Risma Saragih<sup>2</sup>, Sovian Aritonang<sup>3</sup>,  
Sumarna<sup>4</sup>

<sup>1,2,3</sup>Disaster Management, National Security Faculty, Indonesia Defense University, Indonesia

<sup>4</sup>TNI AD Supply and Transportation Unit, Indonesia

[admirdn13@gmail.com](mailto:admirdn13@gmail.com)<sup>1\*</sup>, [herlinasara897@gmail.com](mailto:herlinasara897@gmail.com)<sup>2</sup>, [soviaan.aritonang@idu.ac.id](mailto:soviaan.aritonang@idu.ac.id)<sup>3</sup>,  
[sumarna.amar@gmail.com](mailto:sumarna.amar@gmail.com)<sup>4</sup>

\*Corresponding Author

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### Abstract

Indonesia's success in disaster management cannot be separated from the military's role. The military plays a strategic role by mobilizing military resources on a massive scale through the military command system. However, the ability of Indonesian Army (TNI AD) soldiers and organizations, in general, is considered to have limited capabilities specifically for personnel handling natural disasters. This research aims to map the disaster management implemented by the Indonesian Army in disaster response through the Incident Management System. Data collection was conducted interactively through qualitative methods with in-depth interviews with the Indonesian Army's Supply and Transportation Unit (Pusbekangad). The research results show that the Indonesian Army (TNI AD) has competent resources in disaster response, involving the Indonesian Army's Supply and Transportation Unit, which has primary skills and capabilities in logistics and transportation. These capabilities are facilitated by the Incident Management System, which is structured, systematic, and well-organized. The Incident Management System built by the Indonesian Army involves an incident commander, operation section, planning section, logistics section, finance/administration section, driver section, and the cooking team as a trained, capable, experienced, and ready-to-deploy ad-hoc organization in all operational areas. Indonesian Army uses the Incident Management System to respond to disasters such as earthquakes in Cianjur, South Kalimantan floods, and West Sulawesi floods. The Incident Management System serves as the driving force for the military to fulfill its role in disaster

management, thus becoming a key to success in disaster management in Indonesia. The study results recommend that the incident management system be disseminated more widely to other organizations related to disaster management. Adopting this system is essential to support accelerating disaster management in Indonesia.

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## INTRODUCTION

Military involvement in disaster management occurs in various disaster events, as military assets play a crucial role in disaster relief efforts (Simm, 2019). In India, military involvement is essential in disaster response for search, rescue, and assistance. The active role of the military is required to respond rapidly to rescue efforts and minimize casualties through swift and professional rescue operations (Raj, 2008). The Indian army uses its Navy ships, helicopters, and aircraft to provide safe food, clean water, sanitation, medical facilities, and shelter. The involvement of the Myanmar military in emergency flood operations in 2015 also highlighted the critical role of the military. The military's role involves managing and responding to national, regional, and provincial disaster risks by providing information, sharing resources, conducting search and rescue missions for missing victims, and offering humanitarian assistance to those affected (Zaw & Lim, 2017).

Emergency response requires significant capacity and resources and a quick, accurate, and efficient first response to disaster victims. The military can expedite response and recovery efforts by utilizing suitable assets (Ibrahim et al., 2018) within the disaster management framework. This is especially important in the case of large-scale disasters, as the military possesses specialized skills, capabilities, and resources (Etkin et al., 2023) and can support disaster management efforts through the rapid mobilization of large-scale assets for transportation, logistics, and security (Michaud et al., 2019). This strategic role is carried out by implementing the Incident Management System (IMS). This system is a military framework used in disaster emergency response.

Incident Management System (IMS) is an effective tool for coordinating multi-agency disaster response. IMS enables a decisive and definitive command structure with specific responsibilities assigned to individuals as needed (Beach, 2010). Etkin (2016) explained that this model was developed to respond to slow communication and to manage disasters. Some of the issues that have arisen in disaster management, such as differences in standardization among agencies regarding disaster issues, administrative inadequacies in disaster management support, non-integrated communication, weak disaster action plans, logistics problems, coordination issues, and inadequate facilities, have led to the evolution of this model. These various problems directly affect the effectiveness of the disaster management system, which requires systematic improvement efforts. Therefore, using a systematic, structured, and fast-moving approach, the IMS was developed as a disaster governance mechanism to overcome these gaps and based on principles such as unity of command, common disaster terminology, goal-oriented disaster management, flexible and modular organization, and controlled timeframes. Modern IMS has been developed in the defense and aerospace industries (Beach, 2010).

In this context, military involvement in disaster management also occurs in Indonesia. The presence of the military is necessary, given Indonesia's status as a high-

risk country for natural disasters. This risk is due to the high exposure to various geophysical and hydrometeorological hazards. Geophysical hazards such as massive tectonic activity at the meeting point of three large plates make Indonesia a disaster-prone area (Ayuningtyas et al., 2021). Additionally, Indonesia is one of the most seismically active countries in the world, covering over 18,000 square kilometers of major tectonic plate boundaries (Cummins, 2017). Meanwhile, Indonesia is prone to natural disasters, especially those related to hydrometeorological events such as floods, landslides, and droughts (Aeni & Anwar, 2024). On the other hand, population growth, economic development disparities, urbanization, and lack of social and environmental considerations in the development process make Indonesia highly vulnerable to disasters (Djalante et al., 2017).

The Indonesian Army (TNI AD) is actively involved in various disaster cases in the country. The Indonesian Army's Supply and Transportation Center (Pusbekangad) is a military unit relevant to disaster management. This institution has logistics and military transportation tasks relevant to emergency disaster response needs. The involvement of Pusbekangad in various disaster events is outlined in Law No. 34 of 2004 on the Indonesian National Armed Forces (TNI), which mandates the TNI to assist in disaster relief and is part of Military Operations Other Than War (MOOTW) duties (Subagyo & Rusfiana, 2018). MOOTW does not involve the use or threat of force but includes humanitarian assistance and disaster relief (Singh, 2012). In its implementation, Pusbekangad is involved in various disaster management activities in Indonesia, such as the flood disaster in Mamuju and Banjarmasin and the Cianjur Earthquake.

The military's primary role in disaster response is influenced by organizational structure, practices, transparent chains of command and coordination, and the ability to deploy rapidly (Agung, 2019). Pusbekangad's involvement in disaster response is carried out by forming an ad-hoc and provisional organization that meets disaster management needs. In particular, the government could involve the Armed Forces in managing natural disasters under the MOOTW. In general, the Armed Forces should operate to assist government agencies responsible for managing natural disasters in the country (Wende et al., 2023). The military is essential in effectively responding to natural disasters and climate change (Olson, 2019). Close coordination and cooperation between the civilian community and the military is critical to accelerating post-disaster response and recovery (Ibrahim et al., 2018).

However, not many existing studies have examined the involvement of the Indonesian Army in disaster management from the perspective of the Incident Management System. Based on research conducted by Patria (2018), for example, the research focuses on analyzing the capabilities of soldiers and the Army organization in general, which still need to be standardized, especially for personnel handling natural disasters. This is important because a lack of capacity in policy is seen as a significant cause of policy failure and suboptimal results (Wu et al., 2018). Therefore, further studies are needed to understand the military's role in disaster management. The disaster management efforts undertaken by Pusbekangad can be examined through the Incident Management System model. Various military organizations worldwide, including Indonesia, have developed and used this model. The Incident Management System is highly relevant to disaster response needs by providing efficient and effective emergency response operations and coordinating and supporting the use of available resources. This research aims to explore the extent to which the military applies the Incident Management System in disaster management in Indonesia. This research is expected to analyze the Indonesian Army's tactical steps in disaster management by

deploying its military resources through the Incident Management System.

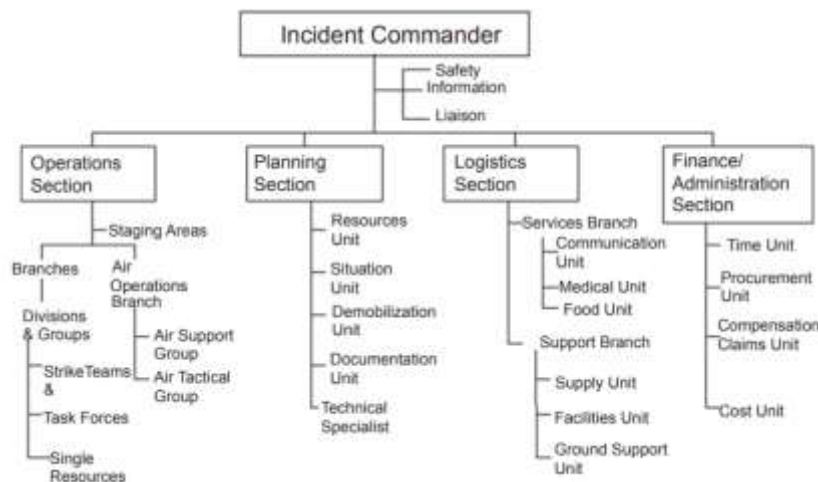
## **METHODS**

This research was conducted using a descriptive qualitative approach. Denzin and Lincoln (1994) provide the necessary methodology for a post-positivist approach involving qualitative methods. This approach allows researchers to deeply understand the research phenomena obtained directly from informants involved in disaster management in Mamuju, Banjarmasin, and Cianjur. The post-positivist approach was chosen because it is interactive and in-depth. Post-positivism implies that the relationship object of study is entirely interactive and neutral, allowing one to delve deeper while maintaining objectivity (Malik & Nugroho, 2016).

This research used descriptive qualitative methods to provide the flexibility to explore data in-depth and comprehensively. Surface-level observations can be deepened and confirmed directly through in-depth interviews using an interview guide with informants who were purposefully selected based on their involvement in military disaster response efforts in Indonesia. The researcher selected 15 informants using the purposive sampling technique, namely informants who are directly involved in disaster management, especially those who are members of the Pusbekangad Disaster Task Force for the Cianjur Earthquake, Banjarmasin Flood, and Mamuju Flood. The informants consisted of the head of the task force, the head of task force logistics, the head of task force operations, the head of the cooking section, and the driver. This research employed the interactive data analysis technique of Miles et al. (2014), where data processing occurs simultaneously and continuously throughout the data collection process, spanning data collection, data reduction, data presentation, verification, and conclusion drawing stages. Researchers use data triangulation techniques to obtain data validation and validity through document review of interview and observation results.

## **RESULT AND DISCUSSION**

McLean et al. (2011) explained that the Incident Management System (IMS) can support analysis, planning, and training related to various threatening events, such as terrorist attacks, national security threats, and natural disasters. This model can support exercises, performance measurement, conceptual design, impact evaluation, response planning, analysis, acquisition, conceptualization, and evaluation of new systems, vulnerability analysis, economic organizations-related impact assessment, and determination of interdependencies between incident management and other infrastructure systems. Meanwhile, incident management can be understood as organizational efforts and activities that provide emergency response operation services efficiently and effectively, coordinated by relevant parties using available resources. Incident management includes planning, emergency response, and recovery from ongoing incident events (Etkin, 2016).



**Figure 1:** Incident Management System (IMS) Model (Etkin, 2016)

Based on the model depicted in Figure 1, Anelli (2006) explained that the Incident Management System (IMS) consists of several elements with strategic roles and functions, including:

1. Incident Commander. This role is responsible for assigning personnel (command staff and general staff), including liaison officers, safety personnel, and information personnel, per the responsible institution's jurisdiction and assignment. The commander is assisted by a group of specialists known as the management staff. There are four main sections under the management staff: administration, planning, logistics, and operations.
2. Operation Section. This section develops and manages operations to achieve the desired mission objectives.
3. Planning Section. The planning section is responsible for creating action plans through the collection, evaluation, and dissemination of information related to operational developments and resource status.
4. Logistics Section. This section provides the necessary resources to support the success of operations by supplying facilities, services, personnel, equipment, and logistics.
5. Finance/Administration Section. This section describes repetitive disasters and administrative and financial matters related to operational interests, such as procurement, financing, and claims.

In implementing the IMS concept, based on the results of interviews and data collection, Pusbekangad's involvement in disaster management utilizes the Incident Management System to form a disaster response team aligned with the institution's duties and functions. Pusbekangad forms a special team that is deployed for disaster management, especially helping with disaster logistics needs. Pusbekangad is a critical element within the Indonesian National Armed Forces (TNI) that plays a vital role in disaster response. Pusbekangad supports the supply, transportation, intendant services, and distribution needs essential for disaster management. The main support areas provided by military logistics for civilian crisis operations include condition preparation, population evacuation, and medical support (Lis, 2017). Pusbekangad can participate in integrated joint disaster response operations by providing logistical support through preparedness and the availability of supply and transportation resources required to ensure sustainable logistical support. The Pusbekangad task force team plays a role in supporting material supplies, both initial supplies and further

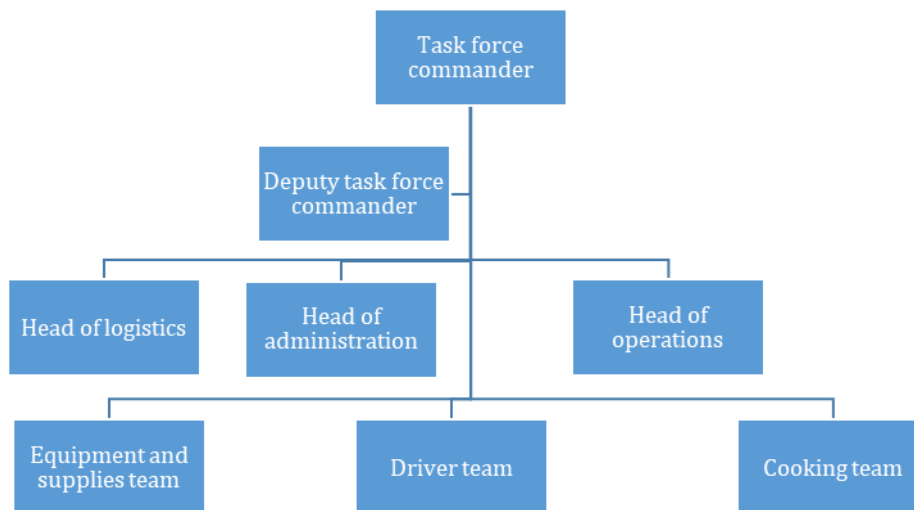
supplies, in the implementation of integrated disaster management joint operations. To support integrated joint disaster management operations, the support of the Pusbekangad task force team is carried out by installing supplies and transportation at both distribution points and service areas.

The involvement of the Pusbekangad task force team in disaster response in Indonesia has been tested in various disaster incidents. The Cianjur (West Java) earthquake in November 2022, the Mamuju (West Sulawesi) flood in October 2022, and Martapura-Banjarmasin (South Kalimantan) in February 2021 are the operating areas where Pusbekangad is deployed. The unit delivered logistical aid to disaster-affected areas by deploying three Indonesian Army Vessels (ADRI) to West Sulawesi and South Kalimantan. Furthermore, Pusbekangad units in various cities engaged in civic missions by establishing public kitchens, sanitation facilities, and field mess halls. The TNI Commander, through the Army Chief of Staff and the Head of Pusbekangad, mobilized and deployed three Indonesian Army Vessels to transport personnel, logistical materials, field hospital equipment, and heavy machinery to assist victims of natural disasters in South Kalimantan and Sulawesi. Pusbekangad's involvement in disaster response is carried out by forming Task Forces (Satgas) or ad-hoc organizations with a specific mission to support disaster management, as in the concept of the Incident Management System, which includes elements such as the incident commander, operation section, planning section, logistics section, and finance/administration section. IMS features an incident commander responsible for leading operations with the support of a group of specialists known as the management staff.

The Disaster Response Task Force (*Satgas Penanganan Bencana*) of Pusbekangad has a structure similar to the Incident Management System. However, it has some modifications that align with the roles and functions of Pusbekangad. The Disaster Response Task Force in Mamuju, Banjarmasin dan Cianjur, has elements with roles and functions similar to the IMS concept. The Disaster Response Task Force includes a Commander of the Task Force (*Dansatgas*), led by a Colonel (Cba) ranked personnel. The Commander of the Task Force is assisted by a Deputy Commander of the Task Force (*Wadansatgas*), held by a Lieutenant Colonel (Cba) ranked personnel. The Task Force leadership is supported by a management staff consisting of the Head of Logistics Section (*Kasilog*), held by a Major (Cba) ranked personnel, equipment and supplies team (*Alkap*), led by a Second Lieutenant (Cba) ranked personnel, Secretary/Budget, held by a Captain (Cba) ranked personnel, a transport driver team led by a Second Sergeant (Cba) ranked personnel. Two cooking teams led by a Captain (Cba) ranked personnel. CBA is a military identity for military members of Pusbekangad, which means Corp of Supply (*Bekal*) and Transportation (*Angkutan*).

The South Kalimantan, West Sulawesi, and Cianjur Task Forces have the same form, structure, and elements of organization. The task force commander leads these three organizations with a disaster response mission equipped with specialized resources to support supply, logistical services, and transportation. The primary focus of the Indonesian Army Disaster Response Task Force is on several assistance centers, including field kitchen support for cooking activities and logistical support, field mess for temporary shelter for disaster victims, the establishment of sanitation facilities for bathing, washing, and toilet needs, and transportation support for distributing aid. Therefore, the resources required by the Task Force are based on the needs related to field kitchen support, temporary shelter for disaster victims, sanitation facilities, and transportation. The elements of the formed organization within the Task Force require personnel with specific capacities who are trained in cooking, field mess

operations, sanitation facilities, and transportation.



**Figure 2.** Organizational Structure of the Indonesian Army Disaster Response Task Force

The IMS structure developed in the formation of the Indonesian Army Disaster Response Task Force has unique characteristics and modifications tailored to the primary tasks and functions of Pusbekangad, a military organization that supports logistics and transportation in operations. As an incident organization specifically formed to handle sudden disaster incidents that broadly impact the community and require a rapid response, the disaster task force has limited functions adapted to the capacities and field needs. Similar to the Incident Management System (IMS) concept, the Indonesian Army Disaster Response Task Force structure consists of essential elements central to incident management. The task force commander acts as the Incident Commander, the Kasipamops/Alkap Team as the Operation Section, the head of logistics as the Logistics Section, and Financial Administration as the Finance/Administration Section. The modification in the Indonesian Army Disaster Response Task Force lies in the addition of cooking and driving teams as part of the technical aspects that align with the military tasks and functions of Pusbekangad. Thus, forming the Indonesian Army Disaster Response Task Force is part of implementing disaster management using the IMS concept. The main elements in the Task Force's structure share similarities with the elements of the Task Force organization. The difference lies in modifying elements that include cooking and driving teams as part of the Task Force structure.

The involvement of Pusbekangad in disaster management is carried out by forming a task force or a formed organization with a specific mission to support disaster response, similar to the IMS concept that includes elements like the Incident Commander, Operation Section, Planning Section, Logistic Section, and Finance/Administration Section. The IMS includes an Incident Commander tasked with leading operations with the support of a group of specialists known as the management staff. The Operation Section develops and manages operations to achieve the desired mission objectives. The Planning Section is responsible for creating action plans by collecting, evaluating, and disseminating information on operation developments and resource status. The logistics section provides the necessary resources to support the operation's success by offering facilities, services, personnel, equipment, and logistics. The Finance/Administration Section is responsible for administrative and financial

matters related to operation interests, such as procurement, financing, and claims (Anelli, 2006; Etkin, 2016; McLean et al., 2011).

**Table 1.** Comparison of the Disaster Task Force Organizational Structure with the IMS Concept

IMS Concept	The Indonesian Army Disaster Response Task Force	Description
Incident Commander	Commander of the Task Force Deputy Commander of the Task Force	The Indonesian Army Disaster Response Task Force Incident Commander consists of the Task Force Commander and Deputy Task Force Commander.
Operation Section	Head of Security and Operational Section	It has similarities between the IMS concept and the Indonesian Army Disaster Response Task Force
Logistic section	Head of Logistics	It has similarities to the IMS concept and the Satgas Bencana Bekang
Planning section	-	In the Disaster Task Force, there is no separate planning section. The planning function is integrated into other elements.
Finance/Administration Section	Secretary	There are similarities between the IMS concept and the Indonesian Army Disaster Response Task Force.
	Equipment and supplies Team, Cooking Team and Driver Team	The elements in the Indonesian Army Disaster Response Task Force team have been modified to adapt to support supply and transportation functions.

The formation of the Disaster Task Force is a tangible manifestation of Pusbekangad's implementation in military operations other than war (MOOTW). The Task Force plays a strategic role in the Pusbekangad organization's operational disaster response activities. Disasters require rapid logistical support and temporary shelter. The Indonesian Army Disaster Response Task Force is a top priority for disaster response. In disasters resulting in thousands of displaced victims, such as the floods in South Kalimantan and West Sulawesi, one of the crucial first responses is providing food and temporary shelter. Disasters that disrupt logistical access, food supply, and housing availability require swift victim rescue and support. This is essential to prevent hunger, potential riots, and health issues.

In this regard, the role of Pusbekangad becomes crucial, considering the tasks and functions inherent in this military organization are directly related to providing logistical support and transportation. In the context of military operations, Pusbekangad's role primarily involves supporting the logistical needs of soldiers on the battlefield. Therefore, the establishment of field kitchens is essential. Similarly,



transportation support is necessary to distribute battlefield military operation equipment and supplies. Bekangad personnel are trained and have specialized skills to provide large quantities of food and transportation support on land, sea, and air. In the context of Military Operations Other Than War (MOOTW), Pusbekangad, through the Disaster Task Force, replicates its role in military operations into disaster response. Both activities require large quantities of logistical and food needs and transportation support to distribute equipment and logistical/food supplies during the disaster emergency response process.

### **CONCLUSIONS, RECOMMENDATIONS, AND LIMITATIONS**

In disaster management efforts, the military employs the same disaster management approach by establishing Disaster Task Forces to implement the Incident Management System (IMS). The Indonesian Army played an important role in disaster response in the case of the Cianjur earthquake and floods in South Kalimantan and West Sulawesi. Through the IMS Model, the Army massively mobilized its military resources in disaster management, especially in providing and distributing food and logistics needs for most disaster victims daily. The IMS is divided into several important sections (incident commander, operation section, logistics section, planning section, finance/administration section, equipment and supplies team, cooking team, and driver team) that effectively support disaster management in various places by moving quickly to coordinate, facilitate and distribute disaster relief.

The system established by the Indonesian Army provides significant opportunities for expediting disaster response in Indonesia, thereby enhancing the safety and security of affected communities. The military's disaster management system emphasizes accuracy, precision, speed, systematicity, and a focus on safety and security. The modified IMS model developed by the military involves the roles of the incident commander, operation section, planning section, logistic section, finance/administration section, driver section, and cooking teams as well-trained, capable, experienced, and readily deployable ad hoc organizations across various operational environments. In disaster management, the military uses military resources in an integrated manner through the establishment of the IMS as an emergency disaster response organization.

The results of this study recommend that the incident management system run by the Army through the Pusbekangad Disaster Task Force can be aligned with other organizations related to disaster management, such as disaster volunteer organizations, and Indonesian government disaster organizations (BNPB, BPBD, Polri, SAR, and others). Therefore, it is expected that there will be no overlap and sectoral ego. The IMS has been widely adopted by related institutions, so collaboration and alignment are needed to help accelerate disaster emergency response. On the other hand, this research still has limitations related to the educational background and experience of soldiers, who are the primary basis for driving the incident management system. This research can be developed and deepened in the aspect of developing the capacity of soldiers and identifying policy support, resources, and coordination between institutions supporting the success of the military's role in disaster management in Indonesia.

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