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Defense Management in Disaster Management in Depok City: Strengthening Inter-agency Synergy to Support National Resilience

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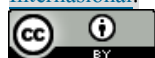
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ABSTRACT

This article examines defense management in disaster management in Depok City with an emphasis on strengthening inter-agency synergy to support national resilience. The study uses a qualitative descriptive approach based on document analysis and secondary data, including Indonesian disaster-management regulations, national policy documents, official information published by the Depok City Government, and relevant disaster-management literature. The analysis focuses on institutional roles, coordination, preparedness, operational response, resource mobilization, information exchange, and the contribution of civil-military cooperation to local resilience. The study finds that disaster management in Depok requires an integrated approach because flood, landslide, storm, fire, and other urban hazards can affect public services, mobility, infrastructure, and community security simultaneously. Official Depok Government information demonstrates the importance of joint preparedness involving local government, TNI-Polri, firefighters and rescue personnel, PMI, and disaster volunteers. The analysis further identifies four strategic requirements: an integrated command and coordination mechanism, interoperable information and communication, joint preparedness and resource planning, and continuous evaluation through exercises and after-action review. From a defense-management perspective, TNI support should be understood within the legal framework for disaster assistance and as part of a broader national resilience system rather than as a substitute for civilian disaster-management institutions. The article proposes an inter-agency disaster resilience framework for Depok that connects risk information, preparedness, response, recovery, and institutional learning. The framework is intended to strengthen the capacity of local government and stakeholders to maintain essential services and protect the population during complex disasters.

INTRODUCTION

Disaster Risk and Urban Resilience in Depok City

Disaster management in an urban municipality is not limited to emergency response after an incident occurs. It is a continuous governance process that combines risk identification, prevention, mitigation, preparedness, emergency response, rehabilitation, and reconstruction. Law Number 24 of 2007 places disaster management within the responsibility and authority of the Government and regional governments and requires implementation to be planned, integrated, coordinated, and

comprehensive. The law also assigns regional governments responsibilities that include protecting communities from disaster impacts, reducing disaster risk, integrating risk reduction into development, and allocating adequate disaster-management funding (Republic of Indonesia, 2007).

Depok City has characteristics that make inter-agency disaster management particularly important. As an urban area within the Jabodetabek metropolitan system, Depok is connected to dense residential areas, transportation corridors, rivers and drainage networks, public facilities, educational

institutions, and economic activities. Consequently, a disaster in one part of the city can generate secondary effects on mobility, health services, public order, logistics, and the continuity of government services. Official information from the Depok City Government in November 2025 identified areas vulnerable to floods and landslides, including Sawangan, Bojongsari, Cipayung, and Tapos, and emphasized the need for early anticipation, cross-sector coordination, and synergy among stakeholders.

From a defense-management perspective, these conditions indicate that disaster risk is also a resilience issue. National resilience is not only associated with conventional defense capabilities but also with the ability of state institutions and society to maintain essential functions when facing non-military threats. Disasters can weaken public infrastructure, disrupt economic activity, create humanitarian pressures, and reduce confidence in government if response systems are slow or fragmented. Therefore, strengthening disaster-management capacity at the city level contributes to the broader resilience of the state.

Problem Statement and Research Gap

The main problem addressed in this article is the gap between the existence of multiple disaster-response institutions and the need for an integrated operational system. Depok has government agencies with specific mandates, as well as TNI-Polri, firefighters and rescue personnel, health institutions, PMI, volunteers, communities, and other stakeholders. The existence of these actors creates substantial response capacity, but capacity does not automatically become collective effectiveness. Coordination can be constrained by differences in authority, standard operating procedures, communication systems, data formats, resource ownership, and decision-making tempo.

Previous disaster-management literature has emphasized the importance of coordination, organizational preparedness, resilient infrastructure, and community participation. Quarantelli (1997), for example, highlights coordination and organizational

relationships as important criteria in evaluating disaster management. Chang et al. (2015) show that resilience should be considered at the systems level because failure in one critical infrastructure can propagate to other systems. The uploaded study on RSAL Dr. Mintoharjo similarly identifies a distinction between internal operational resilience and external vulnerability: a facility may remain operational internally while access, logistics, and inter-agency communication become bottlenecks. This article transfers that analytical insight from a critical military-health facility to the broader urban disaster-management system of Depok.

The research gap therefore lies in integrating disaster management and defense management into one analytical framework at the city level. Rather than treating TNI support as an isolated emergency capability, the study examines how defense resources, civilian institutions, and community stakeholders can be organized into an interoperable system that supports local resilience and, in turn, national resilience.

Research Objectives

This study aims to analyze the role of defense management in disaster management in Depok City and formulate a framework for strengthening inter-agency synergy. Specifically, it seeks to: (1) identify the institutional architecture relevant to disaster management in Depok; (2) analyze coordination requirements among local government, disaster-management agencies, TNI-Polri, rescue, health, community, academic, business, and media actors; (3) identify organizational and operational barriers to synergy; and (4) formulate a practical inter-agency resilience framework that can support continuity of essential services and national resilience

Disaster Management as a Governance System

Disaster management is a cycle rather than a single emergency activity. The Indonesian regulatory framework distinguishes pre-disaster, emergency response, and post-disaster stages. BNPB describes disaster management as a set of measures covering prevention, emergency response, and

rehabilitation and reconstruction, with government and regional governments as the principal responsible actors. The national system also recognizes formal and non-formal institutions, financing mechanisms, technical standards, and stakeholder participation.

The Sendai Framework for Disaster Risk Reduction 2015–2030 emphasizes understanding disaster risk, strengthening disaster-risk governance, investing in resilience, and enhancing preparedness for effective response and recovery. These principles are relevant to Depok because the city requires both institutional readiness and the ability to coordinate resources across organizational boundaries. Disaster resilience is therefore a property of the system, not merely of one agency.

Defense Management and Non-Military Threats

Defense management in this article is understood as the planning, organizing, coordinating, mobilizing, and controlling of defense-related capabilities in support of national objectives. In the disaster context, the relevant capability is primarily the ability to assist civilian authorities with personnel, logistics, transportation, engineering, medical support, communications, evacuation, and other resources when civilian capacity is exceeded or when specific capabilities are required.

The legal framework for disaster management establishes BPBD as the focal point for disaster management at the regional level, while TNI support must operate within applicable laws, authorities, and operational procedures. This distinction is important. Civilian disaster-management institutions retain their institutional responsibilities, while defense resources can strengthen response capacity when appropriately coordinated. The uploaded RSAL Mintoharjo study illustrates this civil-military relationship through the deployment of military medical and amphibious capabilities while coordination is maintained with BPBD and Basarnas.

Inter-Agency Synergy

Synergy differs from simple cooperation. Cooperation may consist of several institutions

assisting each other, whereas synergy implies that planning, information, resources, authority, and operational actions are connected so that the combined effect is greater than isolated actions. In disaster management, synergy requires at least five dimensions: shared situational awareness, compatible command and coordination arrangements, interoperable communication, resource integration, and joint learning.

BNPB has emphasized partnership among government, academia, business, civil society, and media in disaster-risk reduction. This pentahelix orientation complements civil-military coordination because disaster resilience depends not only on state security institutions but also on knowledge, economic resources, social capital, communication channels, and community participation.

National Resilience

National resilience can be approached as the capacity of a national system to withstand disruption, adapt to changing conditions, maintain essential functions, and recover without prolonged degradation. In the context of urban disasters, local resilience contributes to national resilience because metropolitan areas contain critical infrastructure, population concentrations, public institutions, and economic networks. A city that can sustain emergency services, protect vulnerable populations, maintain public order, and restore essential infrastructure contributes to the stability of the wider national system.

METHODS

Research Design

This study uses a qualitative descriptive design with a document-analysis approach. The unit of analysis is the inter-agency disaster-management system in Depok City, viewed through the lens of defense management and national resilience. The study does not claim to report original interviews or field measurements. Instead, it synthesizes publicly available official information, national regulations, policy documents, and relevant scholarly literature.

Data Sources

The primary documentary basis consists of: (1) Law Number 24 of 2007 on Disaster Management; (2) Government Regulation Number 21 of 2008 on Disaster Management; (3) Presidential Regulation Number 87 of 2020 on the National Disaster Management Master Plan 2020–2044; (4) relevant minimum-service and local-government provisions; (5) official information published by the Depok City Government concerning disaster preparedness and stakeholder coordination; (6) BNPB policy information on disaster-management systems and stakeholder partnerships; and (7) scholarly literature on disaster resilience, infrastructure resilience, coordination, and civil-military disaster response. The uploaded article on RSAL Dr. Mintoharjo is used as a comparative analytical reference, particularly regarding operational continuity and civil-military coordination.

Data Analysis

Document analysis was conducted through four stages: identification of institutional roles; extraction of coordination mechanisms and operational requirements; comparison of documented practices with disaster-management and resilience concepts; and synthesis into an inter-agency framework. The analysis is interpretive and therefore does not claim statistical generalization. Where official sources describe planned or observed coordination, the article reports those descriptions without converting them into unsupported measures of performance.

Institutional Architecture of Disaster Management in Depok

The documentary evidence indicates that disaster management in Depok is inherently multi-actor. The municipal government provides the local governance framework and coordinates public services, while BPBD performs the disaster-management function within the regional system. Other local government agencies contribute sectoral capabilities such as health, social protection, public works, transportation, communications, fire and rescue, and public order. TNI and Polri provide additional security, personnel, logistics, evacuation, and operational support according to their respective mandates. PMI, volunteers, communities, universities, businesses, and media contribute social, technical, material, and communication resources.

In November 2025, the Depok City Government reported a disaster-preparedness activity involving TNI-Polri, firefighters and rescue personnel, SAR teams, PMI, and disaster volunteers. The same official report highlighted vulnerable areas and called for early anticipation and cross-sector synergy. This provides documentary evidence that the city already recognizes multi-stakeholder preparedness as a necessary element of disaster management. The management challenge is therefore not simply adding more institutions, but improving how existing capacities are connected before and during an emergency.

RESULTS AND DISCUSSION

Table 1. Indicative Inter-Agency Roles in Depok Disaster Management

Actor	Core contribution	Coordination requirement
Depok City Government	Policy, public services, budget, inter-agency coordination	Unified priorities and decision-making
BPBD	Risk information, preparedness, emergency coordination	Common operating picture and incident coordination
TNI	Personnel, logistics, engineering, medical/transport support when required	Clear tasking, legal authority, liaison officers

Polri	Security, traffic, evacuation support, public order	Integrated field coordination
Damkar/SAR	Rescue, evacuation, technical emergency response	Joint dispatch and interoperable communications
Health agencies	Emergency health, surveillance, medical referral	Shared casualty and facility information
PMI/volunteers	Humanitarian assistance, community support	Registration, task allocation, safety protocols
Academia/business/media	Knowledge, resources, innovation, public communication	Data standards, partnership mechanisms, trusted messaging

From Institutional Presence to Operational Synergy

The key analytical finding is that institutional presence must be transformed into operational interoperability. Each organization may possess competent personnel and equipment, yet fragmented information can delay decisions. For example, a rescue unit needs accurate information about affected locations; health services need information about casualties and referral capacity; public-works personnel need information about damaged drainage or roads; and logistics planners need access information. Without a common operating picture, multiple agencies can arrive at the same location while another affected location remains underserved.

The concept of a common operating picture should therefore become a central element of Depok's disaster-management architecture. At minimum, it should integrate hazard information, affected locations, access routes, evacuation points, available shelters, critical infrastructure status, health-facility capacity, available response assets, and unresolved operational needs. Information should be updated through a defined reporting cycle and disseminated to authorized agencies in a form that supports decisions rather than merely producing large volumes of data.

Civil-Military Coordination in Disaster Response

The defense-management dimension becomes most visible when a disaster exceeds normal civilian capacity or requires specialized capabilities. TNI

support may include personnel, transportation, engineering, medical support, logistics, communications, and evacuation assistance. However, effective civil-military coordination requires clear role boundaries and liaison mechanisms. The purpose is not to replace civilian disaster management but to ensure that specialized defense capabilities can be activated rapidly and used according to a common operational plan.

The uploaded RSAL Mintoharjo study provides a useful comparative example. It reports that the military hospital combines internal operational continuity with external disaster-response capabilities and coordinates with BPBD and Basarnas. At the same time, the study identifies access and communication interoperability as continuing constraints. Applied to Depok, the lesson is that having military assets available is insufficient if tasking, communications, access routes, logistics, and information exchange are not planned jointly before an emergency.

Joint Preparedness and Resource Management

Preparedness should be organized around scenarios rather than around institutions. For Depok, scenario-based planning can include urban flooding, landslides, extreme rainfall and wind events, major fires, infrastructure disruption, and compound emergencies. Each scenario should identify trigger conditions, command arrangements, priority populations, evacuation routes, staging areas,

logistics requirements, medical referral pathways, communication channels, and restoration priorities.

Resource management should also be mapped in advance. A city-wide resource registry can identify rescue equipment, boats, pumps, ambulances, shelters, heavy equipment, generators, medical teams, communication equipment, and trained personnel. The registry should include location, availability, responsible institution, activation procedure, and limitations. This reduces the risk that response managers spend valuable time discovering resources during an emergency.

Communication Interoperability

Communication is a critical component of inter-agency synergy because disaster conditions can disrupt ordinary telecommunications. The RSAL Mintoharjo study reports that cellular congestion can create communication problems and that civilian and military units may rely on ad-hoc channels. Depok should therefore establish a layered communication architecture combining normal digital channels with backup radio and other resilient communication mechanisms.

Interoperability is not only a technology issue. Agencies also need common terminology, message formats, reporting intervals, contact directories, authentication procedures, and rules for information classification. Joint exercises should test communication failure explicitly, because a system that works under normal network conditions may fail when the disaster itself damages the network.

The Pentahelix Dimension

Government-led coordination should be complemented by a pentahelix approach involving government, academia, business, community, and media. Academia can support hazard analysis, modeling, evaluation, and innovation. Businesses can contribute logistics, facilities, technology, and continuity resources. Communities provide local knowledge, volunteer capacity, and first-response networks. Media can support risk communication and public information, provided that messages are coordinated and verified.

The pentahelix approach should not be treated as an informal slogan. It should be operationalized through agreements, contact points, joint exercises, data-sharing arrangements, and defined roles. Such institutionalization makes collaboration less dependent on personal relationships and more resilient to staff rotation or leadership changes.

Disaster Management as Part of National Resilience

Disaster resilience in Depok has a direct relationship with national resilience because the city forms part of a highly interconnected metropolitan system. When transportation, health, communications, water management, electricity, education, or commercial activities are disrupted, effects can extend beyond the immediate disaster location. Consequently, resilience planning should prioritize continuity of critical functions rather than focusing solely on the number of emergency personnel deployed.

Four dimensions are particularly relevant. First, institutional resilience requires clear authority and coordination. Second, infrastructure resilience requires protection and redundancy for critical systems. Third, social resilience requires public preparedness and protection of vulnerable groups. Fourth, operational resilience requires the ability to mobilize and sustain resources over time. Defense management contributes mainly by strengthening the fourth dimension and, where appropriate, supporting the other three through specialized capabilities.

Proposed Inter-Agency Defense Management Framework

Based on the documentary analysis, this article proposes the DEPON-RESILIENCE framework for Depok: Data, Engagement, Preparedness, Operations, Networked Communication, Recovery, Institutional Learning, and National Resilience. The framework is not presented as a new legal institution; it is a management architecture that can be integrated into existing disaster-management mechanisms.

Table 2. Depon-Resilience Framework

Component	Main action	Expected result
Data	Integrate hazard, exposure, assets and response-resource data	Shared operating picture
Engagement	Formalize liaison and pentahelix partnerships	Stable stakeholder network
Preparedness	Conduct scenario planning and joint exercises	Faster activation
Operations	Use unified priorities and clear tasking	Reduced duplication/gaps
Networked Communication	Maintain interoperable primary and backup channels	Reliable information flow
Recovery	Coordinate restoration of essential services	Faster functional recovery
Institutional Learning	After-action review and corrective plans	Continuous improvement
National Resilience	Link city resilience to continuity of critical functions	Stronger societal and state resilience

The first component, Data, establishes the common operating picture. Engagement creates durable relationships among institutions. Preparedness converts relationships into tested procedures. Operations ensures that the procedures work under pressure. Networked Communication protects the information flow required by those procedures. Recovery extends coordination beyond the emergency phase. Institutional Learning closes the cycle through evaluation. The final component, National Resilience, connects local disaster performance with broader state stability.

Implementation Priorities for Depok City

Implementation can be organized into three time horizons. In the short term, Depok can strengthen liaison directories, common emergency contact points, resource inventories, communication protocols, and scenario-based coordination meetings. In the medium term, agencies can conduct integrated exercises involving flood, landslide, evacuation, health, logistics, and communication-failure scenarios. In the longer term, the city can integrate disaster-risk information into development

planning, infrastructure investment, public-service continuity planning, and inter-regional cooperation.

An important principle is measurability. Coordination should be evaluated through indicators such as time to establish a common operating picture, time to mobilize critical resources, percentage of priority assets with continuity plans, communication availability during exercises, evacuation-route readiness, completion of after-action reviews, and closure of corrective actions. These indicators should be used for organizational learning rather than as simplistic rankings of agencies.

The findings have several policy implications. First, disaster management should be integrated into local development planning rather than treated as a separate emergency sector. This is consistent with the national approach that disaster-risk reduction should be incorporated into development planning and budgeting. Second, inter-agency coordination should be institutionalized through procedures, liaison mechanisms, data standards, and exercises rather than relying primarily on informal relationships.

Third, the contribution of defense institutions should be planned through capability-based arrangements. The relevant question is not simply whether TNI personnel can assist, but what specific capability is required, under what conditions, through which authority, for how long, and with what logistics and communication support. This approach makes civil-military cooperation more predictable and reduces the possibility of overlapping tasks.

Fourth, resilience indicators should be incorporated into evaluation. Response speed is important, but it should be complemented by measures of continuity, communication reliability, resource readiness, evacuation preparedness, and completion of corrective actions. Fifth, community participation should be treated as an operational capability. Residents often possess local knowledge about drainage, access routes, vulnerable households, and neighborhood resources that can complement formal government information.

Finally, the defense-management perspective should remain connected to the broader objective of national resilience. The purpose of strengthening inter-agency synergy is to ensure that disasters do not create prolonged disruption to essential services, public safety, economic activity, and social stability. Local resilience therefore becomes one component of the wider resilience of the Indonesian state

Implications for Policy and Defense Management

Scenario-based preparedness is more useful than generic readiness because it forces agencies to define what they will actually do under specific conditions. A flood scenario, for example, should specify rainfall or water-level triggers, locations of likely inundation, priority populations, road closures, evacuation points, shelter capacity, medical requirements, pump and drainage needs, logistics routes, communication channels, and public-information messages.

A landslide scenario requires a different operational configuration. It may require geological assessment, area isolation, search and rescue, heavy equipment, medical triage, traffic management, and longer-duration logistics. A major urban fire may

require fire suppression, evacuation, smoke-related health support, water supply management, traffic control, and public communication. Compound scenarios should also be tested because disasters can occur simultaneously or trigger secondary disruptions.

For each scenario, agencies should identify minimum response packages. A minimum response package is a predefined combination of personnel, equipment, transportation, communications, medical support, logistics, and command functions that can be activated rapidly. This concept improves interoperability because agencies know what resources are expected and who is responsible for mobilizing them.

Exercises should progress from discussion-based tabletop exercises to functional exercises and, where appropriate, full-scale exercises. After each exercise, the city should conduct an after-action review. The review should distinguish between problems of capacity, coordination, procedure, communication, equipment, and decision-making. Corrective actions should then be assigned to named institutions and monitored until completed. Institutional learning is essential because resilience is not achieved through a single preparedness activity; it is built through repeated testing and improvement.

Scenario-Based Preparedness for Depok

Disaster management should measure success not only by how many people are rescued but also by how quickly critical functions are maintained or restored. In a metropolitan environment, hospitals, roads, bridges, drainage systems, electricity, water supply, communications, government offices, schools used as shelters, and logistics facilities form an interconnected network. Failure of one element can increase pressure on others.

The uploaded RSAL Mintoarjo study demonstrates this systems perspective. The hospital's internal adaptations, including elevated critical utilities and dewatering systems, increased internal continuity, while flooded access roads remained an external vulnerability. The lesson for Depok is that

continuity planning must extend beyond the physical boundary of individual facilities. A resilient hospital still needs accessible roads, functioning electricity, communications, clean water, medicine supply, and referral routes. The same principle applies to emergency shelters and command centers.

A city-level continuity plan should therefore identify critical services, acceptable interruption periods, dependencies, backup arrangements, and restoration priorities. For example, emergency medical services may require priority access routes; shelters may require generators, water, sanitation, and communications; command centers require redundant power and communications; and logistics points require access even when ordinary roads are disrupted. These dependencies can be mapped before disasters occur.

This approach also strengthens defense management because specialized defense capabilities can be pre-assigned to specific continuity gaps. Engineering units may support access restoration where legally and operationally appropriate; medical units may augment civilian capacity; transportation assets may support evacuation; and communications capabilities may provide redundancy when ordinary networks fail. The objective is not to militarize routine public services but to ensure that specialized capabilities are available for defined contingencies.

Critical Infrastructure and Continuity of Essential Services

Risk governance is the mechanism that converts technical risk information into public decisions. In Depok, risk governance should connect the information generated by disaster-management, meteorological, hydrological, infrastructure, health, and community actors with decisions about preparedness, evacuation, resource deployment, and public communication. The governance challenge is particularly important in urban disasters because the same rainfall event can produce different consequences in different locations depending on drainage capacity, land use, population density, road access, and the vulnerability of critical facilities.

A defense-management perspective adds a second layer to risk governance: the city must know not only where the hazard is located but also which capabilities can be mobilized when the hazard exceeds routine capacity. This requires a pre-agreed escalation mechanism. At the preparedness level, agencies monitor indicators and increase readiness. At the response level, a coordination mechanism prioritizes life safety and essential services. If additional specialized capabilities are needed, appropriate requests and tasking procedures activate supporting resources. Such a mechanism reduces uncertainty and prevents the emergency from becoming a negotiation among institutions at the moment when time is most critical.

Decision-making should also distinguish strategic, operational, and tactical levels. Strategic decisions establish priorities and allocate political and administrative resources. Operational decisions translate those priorities into sectoral and geographic tasks. Tactical decisions concern immediate actions by field teams. Confusion among these levels can produce either excessive centralization or fragmented field activity. Depok's inter-agency system would benefit from clearly defined decision rights and liaison functions at each level.

The governance model should remain accountable to the legal responsibilities of each institution. A unified operational picture does not mean that all agencies lose their institutional authority. Instead, it allows each institution to act within its mandate while contributing to common objectives. This is particularly important for defense-management resources, because their use in disaster response must remain linked to lawful authority, operational procedures, and civilian disaster-management priorities.

CONCLUSION **Conclusion**

Defense management can strengthen disaster management in Depok City when it is integrated with civilian disaster-management institutions through clear authorities, shared information, interoperable communication, joint preparedness, and coordinated

resource mobilization. The documentary evidence indicates that Depok already practices multi-stakeholder preparedness involving local government, TNI-Polri, rescue and firefighting personnel, PMI, and volunteers. The central challenge is to transform this stakeholder presence into a consistently interoperable operational system.

The analysis also shows that disaster resilience should be treated as a national-resilience issue. Urban disasters can disrupt critical services and generate cascading effects across metropolitan networks. Accordingly, the role of defense management is to provide additional capability and resilience without displacing the civilian institutional responsibilities established by disaster-management law.

Recommendations

First, Depok should strengthen a city-level common operating picture that integrates risk, infrastructure, resource, evacuation, health, and logistics information.

Second, inter-agency liaison officers and standardized coordination procedures should be established and exercised before disasters occur.

Third, TNI-Polri, BPBD, rescue, health, public-works, PMI, volunteer, academic, business, and media stakeholders should conduct periodic scenario-based exercises, including communication-failure scenarios.

Fourth, the city should maintain an updated registry of emergency resources and define activation procedures for resources that may be provided by defense institutions and external partners.

Fifth, every major exercise or disaster response should produce an after-action review with assigned corrective actions, responsible institutions, deadlines, and follow-up monitoring.

Sixth, disaster-risk reduction should be integrated into development and infrastructure planning so that resilience investment reduces the probability and consequences of future disruptions.

Research Limitations

This article is based on documentary and secondary-data analysis and therefore does not provide primary interview findings, direct field measurements, or statistical estimates of agency performance. Future research should test the proposed framework through field observation, interviews with BPBD and other stakeholders, simulation exercises, social-network analysis, and quantitative indicators of response time and resource mobilization.

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- Editorial note: This manuscript follows the visual organization of the supplied MUDIMA article template. The Depok-specific analysis is based on documentary evidence and is deliberately written without inventing interview quotations or field observations.