The Role Of Multi-Stakeholder Collaboration In Flood Disaster Management System In Bekasi: A Critical Review Of Response And Recovery

Peran Kolaborasi Multi-Pihak Dalam Sistem Pengelolaan Bencana Banjir Di Bekasi: Tinjauan Kritis Terhadap Tanggap Darurat Dan Pemulihan

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ABSTRACT
This study aims to critically analyse the role of multi-stakeholder collaboration in Bekasi's flood disaster management system, focusing on response and recovery following the March 2025 flood. Using a qualitative approach with a literature review method, this study examines various policy documents, official reports, academic studies, and media sources related to flood management. The findings indicate that although a formal collaboration framework exists, implementation in the field still faces challenges such as government institutional dominance, resource imbalances, and a lack of precise coordination mechanisms. Collaboration primarily focuses on response and recovery, while mitigation and preparedness receive less attention. Additionally, community participation in evacuation and cleanup efforts demonstrates the potential for development under the Community-Based Disaster Management (CBDM) approach, but engagement in planning and evaluation remains limited. This study recommends enhancing collaborative capacity, strengthening cross-sectoral coordination mechanisms, and integrating all phases of the disaster management cycle to improve the effectiveness of a more adaptive and responsive disaster risk management system in the future.
Keywords: Multi-stakeholder Collaboration, Disaster Management, Bekasi Flood, Disaster Response, Disaster Recovery.

ABSTRAK
Penelitian ini bertujuan untuk menganalisis secara kritis peran kolaborasi multi-pihak dalam sistem manajemen bencana banjir di Bekasi, dengan fokus pada tanggap darurat dan pemulihan pasca banjir Maret 2025. Menggunakan pendekatan kualitatif dengan metode tinjauan literatur, penelitian ini mengkaji berbagai dokumen kebijakan, laporan resmi, studi akademis, dan sumber media yang berkaitan dengan manajemen banjir. Hasil penelitian menunjukkan bahwa meskipun kerangka kerja kolaborasi formal telah ada, implementasi di lapangan masih menghadapi tantangan seperti dominasi institusi pemerintah, ketidakseimbangan sumber daya, dan kurangnya mekanisme koordinasi yang jelas. Kolaborasi terutama berfokus pada tanggap darurat dan pemulihan, sementara mitigasi dan kesiapsiagaan mendapat perhatian yang lebih sedikit. Selain itu, partisipasi masyarakat dalam upaya evakuasi dan pembersihan menunjukkan potensi pengembangan dalam pendekatan Pengelolaan Bencana Berbasis Masyarakat (CBDM), namun keterlibatan dalam perencanaan dan evaluasi masih terbatas. Studi ini merekomendasikan untuk meningkatkan kapasitas kolaborasi, memperkuat mekanisme koordinasi lintas sektor, dan mengintegrasikan semua fase siklus manajemen bencana guna meningkatkan efektivitas sistem manajemen risiko bencana yang lebih adaptif dan responsif di masa depan.
Kata Kunci: Kolaborasi Multi-Pihak, Manajemen Bencana, Banjir Bekasi, Tanggap Bencana, Pemulihan Bencana.

1. Introduction

Flood disaster is a natural phenomenon often occurring in Indonesia, especially in urban and densely populated areas such as Bekasi. Studies on disaster management have proliferated in recent decades, with particular attention paid to the multi-stakeholder

collaborative approach, which is considered an effective strategy in disaster management. The flood phenomenon in Bekasi in March 2025 became a critical momentum to examine the effectiveness of the disaster management system involving various stakeholders in the local context. The flood intensity reached 1,100 litres/second, far exceeding the 2020 600 litres/second flood. It affected eight sub-districts with 28,152 families or 86,437 people, emphasising the urgency of an in-depth study of the disaster response and recovery system implemented (Admin Bekasi Kota.go.id, 2025). Collaborative approaches to disaster management have been a significant focus in academic literature. (Lemos et al., 2024) suggests that stakeholder collaboration is central to increasing community resilience to natural disasters. However, comprehensive studies on implementing collaborative approaches in the context of flooding in urban areas in Indonesia are still limited, especially those that analyse the interactions between local governments, disaster management agencies, communities, volunteers, the private sector, and non-governmental organisations in an integrated analytical framework.

The gap in the literature is further emphasised by the findings (Khofifah Ketiara, 2022), which reveal that collaboration in flood management in Bekasi Regency is not optimal, with various challenges such as imbalance of resources, leadership roles that are not yet broad, lack of comprehensive technical regulations for all stakeholders, and the absence of a unique forum for flood management discussions. This condition raises critical questions regarding the effectiveness of the existing disaster management system when faced with a significantly increased intensity of disasters. The collaborative governance theory (Gash, 2021) offers an analytical framework to examine the dynamics of stakeholder interactions in disaster management. This theory emphasises the importance of deliberative processes, trust between actors, clear division of responsibilities, and effective coordination mechanisms in creating optimal collaborative responses. In the context of the 2025 Bekasi flood, applying this theory allows the identification of factors that influence the quality of multi-stakeholder collaboration in the disaster response and recovery chain.

A study (Nurhasna et al., 2024) revealed that in the Indonesian context, the effectiveness of disaster management is often constrained by institutional factors such as fragmentation of authority, limited capacity of local institutions, and lack of policy integration between levels of government. These findings reinforce the urgency of a more contextual study of the dynamics of collaboration in flood management in Bekasi, taking into account specific institutional and socio-cultural characteristics that influence patterns of interaction between stakeholders. In the March 2025 flood, the Bekasi City Government demonstrated a formal response by determining the status of a disaster emergency response based on the Decree of the Mayor of Bekasi No. 400.9.10/Kep.135-BPBD/III/2025, which was valid from 4 to 18 March 2025. Response activities focused on cleaning up mud sedimentation and debris in the affected area, with the deployment of apparatus to assist residents during the critical period (Admin Bekasi Kota.go.id, 2025). At the operational level, the Bekasi Regency BPBD demonstrated a collaborative approach by establishing four collaboration posts on strategic routes involving various parties such as the TNI-Polri, Social Service, Transportation Service, Fire Department, PMI, and disaster volunteers. (Diskominfosantik Newsroom, 2023).

Although collaborative efforts have been initiated, a critical question that needs to be answered is the extent to which such collaboration effectively responds to the magnitude of the disaster. (Fatima & Sudibyo, 2023) argue that the effectiveness of collaboration in disaster management is not only measured by the existence of a formal collaboration structure but also by the quality of interaction, timeliness of decision-making, smooth flow of information, and the ability to adapt to dynamics in the field. Evaluation of these aspects in the context of the 2025 Bekasi flood can provide an in-depth understanding of areas of improvement in the collaboration-based disaster management system. The community and volunteer dimensions

in multi-stakeholder collaboration are also crucial aspects that must be studied. During the 2025 Bekasi flood, the rescue team used rubber boats to evacuate residents trapped in the flood since early morning (Reuters, 2025), demonstrating the mobilisation of community resources in disaster response. (Kinanthi, 2022) underlines that the level of empowerment, access to information, and integration of local knowledge in the planning and implementation of disaster mitigation programs determines the effectiveness of community participation in disaster management. A study of these dynamics in the case of Bekasi can reveal the specific contributions and challenges of the community participation dimension within a multi-stakeholder collaboration framework.

It is worth noting that while the data indicates the involvement of various stakeholders in the Bekasi 2025 flood response, information on the specific contributions of the private sector and non-governmental organisations is still limited. This data gap may reflect challenges in documentation and communication between stakeholders, which are important aspects of collaborative governance. (Liswanty & Prabowo, 2021) Argues that transparency and accountability are prerequisites for effective collaboration in disaster management, and data limitations may indicate areas that need strengthening in existing systems. In a broader perspective, Bekasi, an urban area with complex dynamics, offers a unique context for studying collaborative disaster management. Urbanisation, land use change, and inadequate drainage systems contribute to structural vulnerability to flooding, while socio-economic dynamics affect the adaptive capacity of communities (Nugroho & Handayani, 2021). Analysis of multi-stakeholder collaboration in this context requires a deep understanding of the interactions between physical-environmental and socio-institutional factors that shape the disaster risk landscape.

This study aims to critically analyse the role of multi-stakeholder collaboration in the flood disaster management system in Bekasi, with a particular focus on the response and recovery mechanisms implemented during the March 2025 flood. Specifically, this study seeks to identify factors that influence the effectiveness of collaboration, analyse interaction patterns between stakeholders, and formulate recommendations for strengthening a more adaptive and responsive collaboration-based disaster management system for future disaster risk dynamics. The originality of this study lies in its analytical approach that integrates the perspective of collaborative governance with the specific context of urbanisation and environmental change in Bekasi and focuses on an in-depth analysis of the coordination and communication mechanisms between stakeholders that are crucial determinants of disaster response effectiveness. Adopting a qualitative methodology based on library research, this study analyses policy documents, official reports, academic studies, and media sources on flood management in Bekasi to produce a comprehensive understanding of the dynamics of multi-stakeholder collaboration in disaster management.

Based on the literature review and preliminary analysis of available data, this study hypothesises that the effectiveness of the flood disaster management system in Bekasi is determined by the quality of multi-stakeholder collaboration, which is influenced by factors such as clarity of authority distribution, coordination mechanisms, information flow, integration of local knowledge, and institutional adaptive capacity. The findings of this study are expected to contribute to the development of theoretical and practical frameworks for strengthening collaboration-based disaster management systems, not only in Bekasi but also in other urban areas with similar disaster risk characteristics.

2. Literature Study
Previous Research

A review of previous literature on multi-stakeholder collaboration in disaster management, primarily floods, shows the development of collaborative approaches in disaster

management in various regions of Indonesia. This literature review is important to understand the conceptual and empirical framework that can be applied in analysing flood cases in Bekasi in March 2025. (Harlyandra & Kafaa, 2021) conducted a study on multi-stakeholder collaboration in the context of waste management in Pengarengan Village, Cirebon Regency. Although it does not directly discuss flood disaster management, this study provides important insights into the dynamics of multi-stakeholder roles in addressing environmental issues. Their findings reveal that the success of the waste management program is supported by a precise distribution of roles among stakeholders, with PT. Cirebon Electric Power (CEP) acting as the initiator, enabler, mentor, and controller; the Formas PL group as the implementer and controller; the Village Government as the regulator and controller; the PESPA group as the implementer; community leaders as the enabler and controller; and the Cirebon Regency Environmental Service as the regulator and implementer. This study emphasises that the main challenges in multi-stakeholder collaboration are the consistency of stakeholder involvement and the need for continuous innovation.

In a more specific context related to flood disaster management, (Permanahadi & Widowati, 2022) conducted a study on flood disaster mitigation in Semarang City. This study evaluated the implementation of Permendagri No. 33 of 2006 as a disaster mitigation guideline. Using a descriptive quantitative method through observation, preliminary studies, and interviews, this study revealed that Semarang City only succeeded in implementing 52.6% (10 of 19 indicators) of the disaster mitigation guidelines that had been set. This finding indicates a gap between the policies that have been set and their implementation in the field, which can be a valuable lesson for analysing flood cases in Bekasi. In addition, this study identified several factors that caused flooding in Semarang, such as land subsidence, high tides, rising sea levels due to global warming, poor drainage systems, and lack of public awareness in protecting the environment. The latest study by(Laveda et al., 2024) regarding the Community Based Disaster Management (CBDM) Approach through the Disaster Preparedness Village (KSB) in Jatibening Village, Bekasi City, provides a more geographically and contextually relevant perspective to this study. Using a descriptive qualitative method, this study analyses the implementation of CBDM in the KSB program, focusing on disaster mitigation, handling priorities, performance evaluation, and resource mobilisation. Laveda et al. found that disaster management involves three important stages, namely before, during, and after a disaster, to reduce risk and increase community resilience. This study underlines the importance of the active role of government and community participation in managing disaster risk. The supporting factors for CBDM identified include the availability of an adequate budget, community participation, and good communication between stakeholders. Meanwhile, inhibiting factors include suboptimal socialisation and training, lack of logistics storage warehouses, and weak Watershed (DAS) regulations enforcement.

(M Geovani Sanahan, 2021) Conducted a study on collaborative governance in flood disaster management in Palembang City. Although this study was conducted more than five years ago, its contribution to understanding collaborative governance in Indonesia's context of flood disasters remains relevant. Using qualitative descriptive methods, this study revealed that the success of flood disaster management is highly dependent on collaboration between government agencies and active community participation. These findings suggest that technical and non-technical efforts must be integrated, with collaboration being a critical factor in disaster response. This study also produces recommendations for optimising coordination in the placement of field personnel and maximising the use of government facilities to anticipate disasters better. To complement the understanding of policy evaluation in the context of flood disasters, this study (Hakam, 2021) regarding the evaluation of the policy process for handling tidal floods in Semarang City provides a valuable evaluative perspective. Although conducted more than five years ago, this study shows the importance of

comprehensively evaluating the flood management policy process. Using a qualitative descriptive method, this study reveals that from evaluating the policy process for handling tidal floods in Semarang City, problems still have not been appropriately resolved, such as unoptimised channel capacity and less than optimal efforts to stop land subsidence.

The synthesis of these five studies provides several important insights. First, multi-stakeholder collaboration requires a precise distribution of roles with effective coordination mechanisms to ensure consistency and sustainability of efforts. Second, the gap between policy and implementation remains a challenge in disaster management in Indonesia, indicating the need to strengthen institutional capacity and regulatory enforcement. Third, the community-based disaster management approach (CBDM) offers a promising framework for enhancing community resilience to disasters, focusing on active community participation in all stages of disaster management. Fourth, the integration of technical and non-technical efforts, as well as inter-agency cooperation, are critical factors in the effectiveness of disaster response. Fifth, continuous evaluation of the disaster management policy process is needed to identify and address unresolved issues. This literature review provides a strong conceptual and empirical basis for analysing the flood case in Bekasi in March 2025, highlighting the importance of multi-stakeholder collaboration, integration of technical and non-technical approaches, community participation, and continuous evaluation in effective disaster management. The findings from these previous studies will be important references in developing an analytical framework and recommendations for strengthening the collaboration-based flood disaster management system in Bekasi.

3. Research Method

This study uses a qualitative approach with a library research method to analyse the role of multi-stakeholder collaboration in Bekasi's flood disaster management system. The qualitative approach was chosen because it can provide an in-depth understanding of complex social phenomena, especially in collaborative governance and disaster management. (Creswell & Creswell, 2023). The literature study method allows researchers to explore and analyse various sources of information relevant to the research topic to comprehensively understand the dynamics of multi-stakeholder collaboration in flood management in Bekasi. The population in this study includes documentation, reports, policies, publications, and other sources of information related to Bekasi's flood management, focusing on the March 2025 flood. The sample was selected using purposive sampling, with criteria for relevance to the research topic, the recency of information (especially the 2020-2025 period), and the completeness of the data presented. The purposive sampling technique was chosen because it allows researchers to choose the most relevant and informative sources of information to answer the research questions (Rajagopal, 2022). Based on these criteria, the sample includes Bekasi local government policy documents on disaster management, official reports from BPBD and related agencies, media coverage, academic publications on disaster management in Bekasi, and reports from non-governmental organisations involved in flood management.

In order to meet the research objectives, the operational variables used in this study include: (1) multi-stakeholder collaboration mechanisms, which are operationalised as coordination structures, division of roles and responsibilities, and communication patterns between stakeholders; (2) disaster response effectiveness, which is operationalised as timeliness, accuracy of targets, and coverage of flood response; (3) community participation, which is operationalised as active involvement of residents in the planning, implementation, and evaluation stages of flood management; and (4) program sustainability, which is operationalised as the existence of follow-up plans, budget commitments, and ongoing evaluation mechanisms. The operationalisation of these variables aligns with the conceptual framework for collaboration-based disaster management developed by (Nurmandi & Younus,

2023). The data used in this study consists of secondary data obtained from various sources. The primary data sources include policy documents from the Bekasi City Government, including the Decree of the Mayor of Bekasi No. 400.9.10/Kep.135-BPBD/III/2025 concerning the determination of disaster emergency response status, official reports from the Bekasi City BPBD regarding the handling of the March 2025 flood, statistical data from the Bekasi City Central Statistics Agency, academic publications on disaster management in Bekasi, and news from verified national and local mass media. In addition, this study also uses data from reports from non-governmental organisations and international institutions involved in flood management in Bekasi.

Data collection techniques are carried out through several systematic stages. First, researchers identify and inventory data sources relevant to the research topic. Second, researchers collect data through online and offline searches of related documents and publications. Third, researchers verify and validate data by comparing information from various sources to ensure the accuracy and credibility of the data obtained. Fourth, researchers categorise and code data based on established operational variables. This approach aligns with the systematic literature study research methodology recommended by (Snyder, 2021). To ensure the validity of the data, this study uses source and method triangulation techniques. Source triangulation is done by comparing information from different sources related to the same topic. Method triangulation uses various analysis techniques to examine the same data. This approach increases the credibility and dependability of the research results (Fusch et al., 2020).

Data analysis in this study used a qualitative content analysis model developed by (Mayring, 2021). This analysis technique involves several stages: (1) data reduction, where researchers filter and select data that is relevant to the research topic; (2) data presentation, where researchers organise and present data in a format that facilitates analysis; (3) coding, where researchers identify and categorise data based on emerging themes; (4) thematic analysis, where researchers identify patterns and relationships between themes; and (5) interpretation, where researchers develop a deep understanding of the phenomenon being studied based on the findings of the analysis. To enrich the analysis, this study also uses a critical discourse analysis approach to examine how multi-stakeholder collaboration in flood management in Bekasi is represented in various documents and publications. This approach allows researchers to identify assumptions, perspectives, and power relationships that may influence the dynamics of collaboration between stakeholders (Wijaya, 2021).

In order to sharpen the analysis, this study also uses the collaborative governance analysis framework developed by(Emerson et al., 2020), which includes three main dimensions: (1) general principles, (2) collaborative drivers, and (3) capacity for joint action. This framework allows researchers to analyse the factors that influence the effectiveness of multi-stakeholder collaboration in flood management in Bekasi. The research stages begin with research preparation, which includes formulating the problem, determining research objectives, and compiling a conceptual framework. Next, researchers collect data according to the techniques explained previously. After the data is collected, researchers analyse the data using a predetermined analysis model. The final stage is concluding and compiling recommendations based on the analysis results.

This study has several limitations that need to be acknowledged. First, as a desk study, this study did not involve primary data collection through interviews or direct observation, which could provide a deeper perspective on the dynamics of multi-stakeholder collaboration in the field. Second, this study focuses on the case of flooding in Bekasi in March 2025, so the study's results may not be generalizable to different contexts. Third, the availability and completeness of documentation regarding flood management in Bekasi in March 2025 may vary, affecting the analysis's comprehensiveness. However, the researcher has attempted to

overcome these limitations through triangulation of sources and methods to ensure the validity and credibility of the research results.

4. Result and Discussion

Analysis of available data on the role of multi-stakeholder collaboration in the flood disaster management system in Bekasi in March 2025 revealed several important findings. First, the intensity of the flood reached 1,100 litres/second, far exceeding the intensity of the 2020 flood of 600 litres/second. The impact of this flood was very significant, affecting eight sub-districts with a total of around 28,152 families or 86,437 people affected (Admin Bekasi Kota.go.id, 2025). The scale of this disaster demands an effective collaborative response from various stakeholders. The Bekasi City Government demonstrated a formal response by establishing a disaster emergency response status through the Bekasi Mayor's Decree No. 400.9.10/Kep.135-BPBD/III/2025, valid from 4 to 18 March 2025. Technical flood management efforts focused on cleaning up mud sedimentation and debris in the affected area, with the deployment of personnel to assist residents during the critical period. These findings indicate the existence of a formal framework for collaboration in disaster management at the city government level.

The role of the Bekasi Regency BPBD in handling flood disasters can be seen from the establishment of four collaboration posts along the Pantura route to the border with Karawang. These posts involve stakeholders such as the TNI-Polri, Social Service, Transportation Service, Fire Department, PMI, and disaster volunteers. This shows that there are cross-sector coordination efforts in handling flood disasters. However, this finding also indicates that government institutions still dominate collaboration and have not optimally involved non-government actors such as the private sector and non-governmental institutions.

Table 1 below shows the mapping of roles and contributions of various stakeholders in handling flooding in Bekasi in March 2025:

Table 1. Mapping of Stakeholder Roles and Contributions in Flood Management in Bekasi, March 2025

Stakeholders	Role and Contribution	Collaboration Mechanism
Bekasi City Government	Establish emergency response status; Focus on cleaning up mud sedimentation and debris; Deploy apparatus to assist residents.	Bekasi Mayor Decree No. 400.9.10/Kep.135-BPBD/III/2025; Cross-agency coordination
BPBD Bekasi Regency	Establish four collaboration posts along the Pantura route to the border with Karawang.	Cooperation with the TNI-Polri, Social Services, Transportation Services, Fire Department, PMI, and disaster volunteers
Community and Volunteers	Participation in the evacuation process and cleaning of affected areas	Rescue teams use rubber boats to evacuate residents trapped in floods
Private Sector and Non-Governmental Organizations	Not specifically identified	Not specifically identified

Source: Data processed from(Admin Bekasi kota.go.id, 2025),(Diskominfosantik Newsroom, 2023), And(Reuters, 2025)

From the community and volunteers' side, data shows active participation in evacuating and cleaning the affected area. Since early morning, rescue teams used rubber boats to evacuate residents trapped in floods. (Reuters, 2025). This indicates the mobilisation of community resources that contribute to flood disaster management. This finding is consistent with the results of the study. (Laveda et al., 2024) Which emphasises the importance of community participation in disaster management. Evaluation of multi-stakeholder collaboration in flood management in Bekasi revealed several challenges and obstacles. The results of the analysis show that collaboration in flood management in Bekasi Regency is not optimal, with various obstacles such as imbalance of resources, leadership roles that are not yet broad, lack of comprehensive technical regulations for all stakeholders, and the absence of a unique forum for flood management discussions. (Khofifah Ketiara, 2022). This finding highlights the gap between the existence of formal collaboration structures and the effectiveness of their implementation in the field.

Analysis of the coordination mechanism between stakeholders reveals several factors that influence the effectiveness of collaboration in handling floods in Bekasi. Table 2 presents an analysis of these factors based on the collaborative governance analysis framework developed by (Emerson et al., 2020):

Table 2. Analysis of Factors Affecting the Effectiveness of Multi-Stakeholder Collaboration in Flood Management in Bekasi

Dimensions of Analysis	Factor	Implementation Status	Implications
General Principles	Transparency and accountability	Partial	Information regarding the specific roles of the private sector and NGOs is still limited.
	Inclusivity	Partial	The dominance of government institutions in collaboration structures
	Legitimacy	Formal	The Mayor's decision provides formal legitimacy
Collaboration Driver	Leadership	Partial	The leadership role is not yet extensive (Khofifah Ketiara, 2022)
	Incentive	Not identified	There is no data yet on incentives for collaboration.
	Interdependence	Identified	There is a dependency between actors in flood management
Capacity for Collective Action	Resource	Not balanced	Imbalance of resources between stakeholders
	Coordination mechanism	Partial	Collaboration post as a coordination mechanism
	Sharing of knowledge	Limited	There is no specific forum for flood management discussions

Source: Data processed from (Emerson et al., 2020), (Khofifah Ketiara, 2022), (Admin bekasikota.go.id, 2025)

The analysis results also show that the collaborative approach in flood management in Bekasi focuses more on the response and recovery stages. In contrast, the mitigation and preparedness stages have not received adequate attention. This is reflected in the focus of city government activities, which are more focused on cleaning up mud sedimentation and debris in the affected areas after the flood. This finding indicates a gap in the comprehensive, collaborative framework for disaster management. Viewed from the perspective of Community Based Disaster Management (CBDM), the results of the study indicate a need to strengthen community participation in all stages of disaster management. Although the data shows community participation in evacuating and cleaning affected areas, community involvement in the planning and evaluation stages is still not optimal. This is consistent with the findings (Laveda et al., 2024), which identified several inhibiting factors for CBDM, including suboptimal socialisation and training and lack of enforcement of River Basin Area regulations.

The overall analysis of the role of multi-stakeholder collaboration in Bekasi's flood disaster management system shows that despite a formal framework for collaboration, its implementation in the field still faces various challenges. This finding emphasises the need to strengthen collaborative capacity among stakeholders, increase community participation, and develop more effective coordination mechanisms to optimise response and recovery from future flood disasters.

Discussion

The results of the analysis of the role of multi-stakeholder collaboration in the flood disaster management system in Bekasi indicate the existence of a formal framework for collaboration reflected in the Decree of the Mayor of Bekasi No. 400.9.10/Kep.135-BPBD/III/2025 and the establishment of a collaboration post by the Bekasi Regency BPBD. This finding is in line with the concept of collaborative governance put forward by(Ansell & Gash, 2021), which emphasises the importance of formal frameworks and coordination mechanisms in collaborative governance. However, there is a gap between the existence of formal structures and the effectiveness of their implementation in the field, especially in terms of the balance of roles between stakeholders and comprehensive coordination mechanisms. The dominance of government institutions in the collaborative structure indicates an imbalance in participation between stakeholders.(Fatima & Sudibyo, 2023)Effective collaboration in disaster management requires balanced participation from various stakeholders, including government, private sector, non-governmental organisations, and communities. This imbalance can hinder the effectiveness of collaboration because each stakeholder brings different perspectives, resources, and capacities that can complement each other in disaster management.

Establishing a collaborative post by the Bekasi Regency BPBD shows an effort to integrate various stakeholders in disaster response. However, the imbalance of resources and the lack of a specific forum for flood management discussions indicate that the existing coordination mechanism is not yet fully effective. This finding is consistent with the study. (Lemos et al., 2024) This emphasises that effective collaboration requires a structured coordination mechanism, smooth information flow, and balanced resource sharing among stakeholders. The active participation of the community and volunteers in the evacuation and cleaning process of the affected areas shows the potential to develop a Community-Based Disaster Management (CBDM) approach to handling floods in Bekasi. (Kinanthi, 2022) States that the level of empowerment, access to information, and integration of local knowledge in the planning and implementation of disaster mitigation programs determines the effectiveness of community participation in disaster management. Strengthening community participation in

all stages of disaster management can increase community resilience to disasters and optimise the effectiveness of response and recovery.

The finding that the collaborative approach to flood management in Bekasi focuses more on the response and recovery stages, while the mitigation and preparedness stages have not received adequate attention, indicates a gap in the comprehensive, collaborative framework for disaster management. (Nurhasna et al., 2024) A practical collaborative approach to disaster management requires integrating all stages of the disaster management cycle, from mitigation, preparedness, response, and recovery. Excessive focus on response and recovery can overlook opportunities to reduce disaster risk through effective mitigation and preparedness. The imbalance of resources between stakeholders, as revealed in the study (Khofifah Ketiara, 2022), can hinder the effectiveness of collaboration in disaster management. According to Subahar and Riyanto (2023), resource balance is an important prerequisite for effective collaboration in disaster management. This imbalance can reduce the collective capacity of stakeholders to respond to disasters and hinder the effectiveness of coordination between actors.

In the context of transparency and accountability, the finding that information on the specific roles of the private sector and NGOs is still limited indicates a gap in an important aspect of collaborative governance.(Liswanty & Prabowo, 2021) Stated that transparency and accountability are prerequisites for effective collaboration in disaster management. Limited information can hinder coordination between stakeholders and reduce public trust in the effectiveness of the disaster management system. The role of leadership is not yet broad, as revealed in the study (Khofifah Ketiara, 2022), and can hinder the effectiveness of collaboration in disaster management. According to (Nurmandi and Younus, 2023), effective collaborative leadership is key in facilitating stakeholder interaction, building consensus, and encouraging collective action in disaster management. Strengthening the role of collaborative leadership can improve the effectiveness of stakeholder coordination and optimise flood disaster response and recovery.

The lack of a dedicated forum for flood mitigation discussions indicates a gap in the knowledge-sharing mechanisms among stakeholders. According to (Nugroho & Handayani, 2021), a structured and inclusive discussion forum is an important component of collaborative governance, as it facilitates knowledge sharing, consensus building, and collaborative planning. Developing a dedicated forum for flood management discussions can enhance the collective capacity of stakeholders in responding to disasters and optimise the effectiveness of coordination between actors. The findings of this study provide important contributions to the development of science in the field of collaborative disaster management. First, this study highlights the importance of balancing the roles of stakeholders in multi-stakeholder collaboration for disaster management. Second, this study identifies factors that influence the effectiveness of collaboration in flood management in Bekasi, which can be a reference for developing a more effective disaster management system in the future. Third, this study underlines the importance of integrating all stages of the disaster management cycle in a collaborative approach, not only focusing on response and recovery.

The flood case in Bekasi in March 2025 provides an important lesson on the importance of multi-stakeholder collaboration in disaster management. Although there is a formal framework for collaboration, its implementation in the field still faces various challenges. Strengthening collaborative capacity between stakeholders, increasing community participation, and developing more effective coordination mechanisms are key to optimising response and recovery from future flood disasters.

5. Conclsion

   This study analyses the role of multi-stakeholder collaboration in Bekasi's flood disaster management system, focusing on the response and recovery after the March 2025 flood. The findings show that although a formal framework for collaboration is stated in government policies, implementation in the field still faces various challenges. Government institutions still dominate the collaboration that occurs, while the involvement of the private sector and non-governmental institutions is not optimal. In addition, the imbalance of resources and the lack of a precise coordination mechanism cause gaps in the distribution of roles and responsibilities between stakeholders. This study also found that collaboration focuses more on the response and recovery stages, while mitigation and preparedness still receive less attention. Community participation in evacuating and cleaning affected areas shows the potential to develop a community-based approach (CBDM). However, the community's active role in the planning and evaluation stages is still limited. Therefore, this study recommends strengthening collaborative capacity between stakeholders, increasing transparency and accountability in coordination mechanisms, and integrating all stages of the disaster management cycle to create a more adaptive and responsive system to future disaster risks.

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