Analysis of Flood Disaster Management in Regional Medium-Term Development Plans: A Dynamic Governance Perspective

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Abstract

Flooding is a recurring disaster in Bojonegoro Regency, resulting in significant losses for the community and driving home the importance of adaptive and sustainable mitigation policies. This research aims to analyze the implementation of flood disaster management as outlined in the Bojonegoro Regency Regional Medium-Term Development Plan 2025-2029, using the perspective of dynamic governance, which focuses on organizational culture, government capabilities, and the capacity for policy change. The research employs a qualitative method with a case study design, involving an analysis of the Regional Medium-Term Development Plan document and in-depth interviews with relevant regional officials. The findings indicate that while the RPJMD includes comprehensive directions for flood mitigation, its implementation remains suboptimal in the aspects of Able People and Agile Process, primarily due to limitations in technical capacity and cross-sectoral coordination. Nevertheless, the dimensions of Thinking Ahead, Thinking Again, and Thinking Across are beginning to develop through the utilization of risk data, annual evaluations, and inter-agency cooperation. This research concludes that while the foundations of dynamic governance have been established, there is still a need to strengthen human resources, integrate information systems, and ensure consistency in the implementation of flood control programs.

Keywords: Bojonegoro regency; disaster mitigation; dynamic governance; flood control; RPJMD

Introduction

Floods are natural disasters that can threaten lives and property (Andrestian & Hariati, 2025). Floods are one of the most common natural disasters in various countries, with air temperatures reaching 40% higher than land temperatures (Malik et al., 2024). Floods are still one of the most common and destructive disasters in the world. Global flood exposure is estimated at 1.81 billion people, or 23% of the world's total population, living in areas at high risk of significant flooding (Rentschler et al., 2022). This figure means that approximately 1.81 billion people worldwide are potentially exposed to a buildup of more than 0.15 meters of water during a flood with a return period of hundreds of years. With a global population of approximately 7.9 billion, nearly one in four people live in areas at high risk of flooding (Rentschler et al., 2022) . However, the high exposure and frequency of flooding have not always been accompanied by adaptive and integrated policy management, raising questions about the effectiveness of flood management policy planning and implementation at various levels of government.

Based on its geographical and geological characteristics, Indonesia is a flood-prone region, so there is no concern that hydrometeorological disasters, including floods, have dominated disaster events in recent years (Fitriyaningsih et al., 2022). One of the frequent causes in Indonesia is heavy and prolonged rainfall, which poses a high risk of flooding (Stanley & Lisangan, 2020). Based on data collected by the National Disaster Data, Information, and Communication Center (BNPB), 77% of disasters that occurred throughout 2023 were hydrometeorological disasters such as floods and landslides (Wijaya et al., 2025). Throughout 2024, hydrometeorological and geological disasters contributed 98.86% of all natural disasters in Indonesia, with 1,088 floods recorded as one of the most frequent disasters (Rofiiqoh & Susilowati, 2025). Meanwhile, 1,287 floods were recorded across Indonesia between January and October 2025, making flooding the most frequent disaster across Indonesia during this period (Shahibah, 2025).

The national flooding problem is also reflected at the regional level, one example being Bojonegoro Regency, which is annually affected by the overflowing Bengawan Solo River. This region has the largest area crossed by the Bengawan Solo River, with 24,753 hectares of its watershed area. Therefore, the Bengawan Solo River overflows almost every year, inundating Bojonegoro Regency (Sasongko, 2020). Fourteen of the twenty-eight sub-districts in Bojonegoro are located within the Bengawan Solo watershed, leading to recurrent flooding during the rainy season due to river overflow (Widiyastono & Suryanto, 2022). The main contributing factors include high rainfall, river silting, and a suboptimal drainage system (Faradiba et al., 2020). Data Satu Data Bojonegoro recorded 97 flood events in Bojonegoro Regency in 2025, indicating a high risk of flooding and the need for technology-based mitigation strategies and cross-sector collaboration. The high frequency and impact of these floods confirm that flooding is not only influenced by natural factors, but is also closely related to the design and implementation of regional policies in responding to recurring flood risks.

Table 1. Recapitulation of Disaster Events in 2021-2025

No	Type of disaster	Year	Number Of Incident
1.	Overflow Flood	2021	19
2.	Overflow Flood	2022	30
3.	Overflow Flood, Flash Flood, Bengawan Solo Flood	2023	14
4..	Overflow Flood	2024	27
5.	Overflow Flood, Flash Flood, Bengawan Solo Flood	2025	97

Source: Bojonegoro One Data (2025)

The table presents regional data demonstrating a variable trend in flood occurrences from 2021 to 2024, culminating in a peak in 2025. Based on Bojonegoro's One Data (2025), the total number of recorded floods in 2021 was 19, followed by 30 in 2022, 14 in 2023, 27 in 2024, and 97 in 2025 (the accumulation of Bengawan Solo floods, flash floods, and overflows). This

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fact indicates high vulnerability and the need for more adaptive mitigation based on collaboration and technology.

The Bojonegoro Regency Government must take decisive action to address the critical issue of flooding, which poses a serious threat to the region. Flooding leads to substantial losses, including not only physical damage but also interruptions to the community's economic and social activities. The destruction of numerous homes, schools, and public facilities disrupts daily life (Widiyarta, 2024). To lessen the impact of flooding, collaboration among the government, the community, and various stakeholders is necessary.

Based on this, the Indonesian government's efforts in disaster management are regulated in Law Number 24 of 2007, which emphasizes that disaster management is a responsibility and authority. The Bojonegoro Regency Government is working to mitigate flooding through various programs outlined in the Regional Medium-Term Development Plan (Pemerintah Kabupaten Bojonegoro, 2025). However, various findings indicate that the problem of flood management in Bojonegoro Regency lies not solely in technical aspects and field implementation, but rather in how flood management policies are formulated, integrated, and strategically directed within the Regional Medium-Term Development Plan. Thus, the main issues of this study lie in the clarity of policy direction, cross-sectoral integration, and the framework for adapting flood management policies designed in the Bojonegoro Regency Medium-Term Development Plan.

In The Bojonegoro Regency Medium-Term Development Plan 2025–2029 identifies flooding as a strategic regional issue in the context of disaster resilience, while acknowledging that disaster adaptation and mitigation capacities are still not optimal. This document identifies a number of key issues, such as weak synergy between actors, disaster risk reduction that has not become the basis for regional planning, suboptimal disaster regulations, and limitations in control infrastructure and green infrastructure (Pemerintah Kabupaten Bojonegoro, 2025). The recurring floods underscore the need to strengthen flood management policy design in the RPJMD to make it more adaptive and integrated.

The concept of Dynamic Governance, as articulated by (Neo & Chen, 2007) posits that governmental oversight must be adaptable to swiftly evolving environmental conditions. Cultural elements serve as the primary foundation shaping the government's values and orientation in responding to change, which in the context of this research is focused on five key values: state activism, growth orientation, long-term orientation, stability, and prudence. These values reflect the active role, caution, consistency, and long-term development orientation of local governments in formulating adaptive policies. Besides culture, Dynamic Governance is also built upon the government's capabilities, which consist of competent human resources (able people) and agile bureaucratic processes (agile process). These two elements enable the government to adapt when facing changing flood conditions.

The capability element in Dynamic Governance is supported by competent human resources and agile bureaucratic processes that foster three key mindsets *thinking ahead*, *thinking again*, and *thinking across* as the basis for dynamic, responsive, and sustainable governance. This study adopts the Dynamic Governance approach because it goes beyond

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formal policy design to examine organizational culture, bureaucratic capacity, and policy adaptability, which remain underexplored in local-level flood mitigation studies based on regional medium-term development plans. The approach is particularly relevant for assessing the extent to which the Bojonegoro Regency RPJMD has integrated principles of adaptation, mitigation, and cross-sectoral collaboration in responding to evolving flood risks. (Iriani et al., 2025).

Several previous studies have made important contributions to flood management research in Bojonegoro Regency. These studies generally still focus on technical implementation aspects and collaboration mechanisms between actors. For example, research conducted by Suhindarno (Suhindarno, 2021) highlights the BPBD's flood mitigation strategies in the pre-disaster, during-disaster, and post-disaster stages, which are not yet systematically integrated. Meanwhile, (Widiyarta, 2024) shows that flood mitigation has not been optimal due to weak ongoing collaboration between the government, the community, and the private sector. Meanwhile, research (Yulianti et al., 2023) emphasizes the importance of synergy between formal and informal institutions in developing adaptive disaster management.

However, these studies have not specifically analyzed how flood mitigation policies are formulated, directed, and institutionalized in Regional Medium-Term Development Plan (RPJMD) documents using the Dynamic Governance perspective. Therefore, the novelty of this study lies in the analysis of flood management policies based on regional planning documents, with government culture, bureaucratic capacity, and policy adaptability serving as the main analytical framework. This approach allows for a deeper understanding of the role of regional development planning in shaping adaptive disaster governance, which distinguishes this study from previous studies that tend to focus on the technical and operational aspects of disasters.

Source: Scopus Database (2025)

Figure 1. VOSviewr

Photo: The Power of Network Keywords "Regional Development, Flood Disaster Management, Dynamic Governance"

Based on Figure 1, the novelty of this study lies in integrating Dynamic Governance theory into the analysis of regional development policies through the Bojonegoro Regency Medium-Term Development Plan (RPJMD) in the context of flood disaster management, a topic that has rarely been studied comprehensively. A bibliometric analysis of the Scopus

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database shows that global studies have focused more on sustainable development, flood risk management, and public policy governance, while the relationship between dynamic governance and regional disaster policy has not been widely explored. Although previous studies have emphasized the importance of adaptive and collaborative governance in disaster policy in Indonesia (Santoso et al., 2022)Agustina et al., 2024, Khafian et al., 2023), studies that specifically relate this to the RPJMD and flood mitigation are still limited. Thus, this study fills this gap and aligns with the findings (Nashihah et al., 2023), which emphasize the importance of adaptive and institutionalized disaster management but have not been widely studied in regional development planning documents.

Based on the above description, this study aims to analyze the direction of flood disaster management policies in the 2025–2029 Bojonegoro Regency Medium-Term Development Plan through the perspective of Dynamic Governance, in order to assess the extent to which the principles of adaptability, collaboration, and integrated government capacity are integrated into regional development planning documents. This study provides a theoretical contribution by expanding the use of the Dynamic Governance concept in regional disaster policy studies, particularly in the analysis of development planning documents. In addition, this study provides empirical contributions through an in-depth examination of the Bojonegoro Regency Medium-Term Development Plan, a local context rarely examined. Thus, this study positions itself as a policy study that bridges regional development planning with the principles of adaptive governance at the local level, distinguishing it from previous studies that tend to focus on the technical and operational aspects of disaster management.

Literature Review

Dynamic Governance is a governance approach that emphasizes the government's ability to adapt continuously in the face of policy changes and risks (Neo & Chen, 2007). In this study, Dynamic Governance is used as an analytical framework to interpret flood mitigation policies in the Bojonegoro Regency Medium-Term Development Plan (RPJMD) as a representation of the local government's values, capacities, and policy orientations, rather than as a normative concept. The Dynamic Governance framework is operationalized through five main dimensions, namely organizational culture, bureaucratic capacity, agile bureaucratic processes, governmental thinking capabilities (thinking ahead, thinking again, and thinking across), and adaptive policy direction. These five dimensions are used to assess how local governments frame flood risks and respond to them in development planning.

Organizational culture in public policy is understood as the values and orientations that influence how governments prioritize issues and formulate policies . In the context of this study, organizational culture is analyzed operationally through indicators of state activism, long-term orientation, and stability, reflected in the placement of flood issues, program consistency, and policy direction sustainability in the RPJMD. Thus, planning documents are treated as representations of local government policy culture. The dimensions of able people and agile process refer to the organization's capacity and the bureaucracy's flexibility in responding to public issues. In this study, these two dimensions are not measured through an

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evaluation of implementation performance, but rather through how the RPJMD represents the readiness of the apparatus, the mechanism for coordination across regional agencies, and the flexibility of flood mitigation policy planning.

The capability dimension comprising *thinking ahead*, *thinking again*, and *thinking across* is used to assess whether local government policies are reactive or demonstrate anticipatory, reflective, and collaborative orientations in flood management. This study examines how the Bojonegoro Regency Government anticipates flood risks, evaluates existing policies, and integrates disaster issues into cross-sectoral development agendas, while the *change* dimension is reflected through adaptive governance, namely the ability to adjust strategies, policy instruments, and program priorities based on empirical evaluation. Within this framework, the RPJMD is positioned as a representation of organizational culture, government capacity, and regional policy adaptation, enabling a more analytical and non-normative assessment of flood mitigation governance and strengthening the study's contribution to Dynamic Governance and regional development planning.

Method

This research employs a qualitative approach with a case study design to analyze the implementation of Dynamic Governance principles in the Bojonegoro Regency Regional Medium-Term Development Plan (RPJMD) document for the years 2025–2029, with the aim of mitigating flood disasters. A qualitative approach was chosen because this study focuses on understanding the complex and contextual meanings, processes, and dynamics of local policies (Cresswell, 2009). The research location was determined to be Bojonegoro Regency, East Java Province, which has a high level of flood vulnerability, characterized by recurring flood events every year in various sub-districts due to overflow from the Solo River or heavy rainfall (Yulianti et al., 2023). Therefore, it is the appropriate context to examine the application of the Dynamic Governance principle in the 2025–2029 Regional Development Plan (RPJMD) document as a form of regional development policy that is adaptive, collaborative, and responsive to flood risks. This concept is relevant because it emphasizes the government's adaptive capacity in managing complex hydrometeorological disaster risks, including flash floods, overflows, and river floods (Haris & Sumardi, 2025).

The selection of informants was done using purposive sampling, which is a technique for intentionally selecting informants based on specific criteria to obtain in-depth information from individuals or groups who have experience, knowledge, or a strategic position related to the phenomenon being studied (Memon et al., 2025; Usman & Akbar, 2008). This selection is made so that the data obtained truly reflects the perspectives of those directly involved in the process of planning, implementing, and evaluating flood disaster management policies in Bojonegoro Regency. Criteria for selecting informants include:

(1) Having direct knowledge and involvement in the preparation and implementation of the Regional Long-Term Development Plan (RPJMD).
(2) Playing a role in flood disaster management, both at the policy level and in the field.

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(3) Representing government entities, technical agencies, the community, and groups affected by the flood.

(4) Based on these criteria, the research informants consist of six parties considered to represent the policy planners, technical implementers, emergency responders, and those affected by the policy, as presented in the following table.

Table 2. Research Informant Profile

Group	*Definition*	**Stakeholders**
Regional government (Bappeda)	Involved in the preparation and evaluation of the RPJMD and flood disaster management planning	Head of Infrastructure Division, Head of Rendelev Division, Bappeda
Regional Disaster Management Agency (BPBD)	Playing a direct role in preparedness and emergency response.	Head of the emergency and logistics section, BPBD operator
Public Works and Water Resources Department	Infrastructure and flood mitigation managers.	Representative from the Public Works and Water Resources Service
Village Government	Community preparedness mobilizer	Head of Disaster Resilient Village
Society	Policy beneficiaries	The community is affected by the flood.

Source: Author, 2025

The data collection techniques employed in this study included both primary and secondary data. According to (Pamungkas, R. A., 2021), primary data were gathered through in-depth interviews and observations of key informants involved in the planning and execution of flood mitigation policies in the Bojonegoro district. In contrast, secondary data were collected from site documentation. Data analysis utilized content analysis techniques combined with the interactive analysis model proposed by (Miles & Huberman, 2014) and (Zhang & Wildemuth, 2005), consisting of three stages: data reduction, data presentation, and conclusion drawing and verification. Content analysis was specifically applied to examine and code the information found in the Regional Medium-Term Development Plan documents and interview transcripts. The analysis process was conducted iteratively and continuously, from data collection to the final conclusion. The validity of the data was assessed through source and method triangulation, which involved comparing information from various informants along with the findings from interviews, observations, and document analyses. This approach aimed to ensure consistent and reliable data, as noted by (Sugiyono, 2013), who described triangulation as a technique for validating data through the use of diverse sources and data collection methods.

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Result and Discussion

Dynamic Governance Perspective In Flood Disaster Management Through The 2025–2029 Bojonegoro Regency Regional Medium-Term Development Plan

The phenomenon and empirical facts of flood disaster management in Bojonegoro Regency in the RPJMD are analyzed based on interview results, document analysis, and field observations through the perspective of Dynamic Governance by (Neo & Chen, 2007) . This framework is used to examine the dynamics of local government policies in flood planning, mitigation, and preparedness, which include the elements of capable people, agile processes, organizational culture (state activism, long-term orientation, and stability), and government capabilities, which include thinking ahead, thinking again, and thinking across. The integration of these elements forms adaptive governance as a basis for assessing the ability of flood management policies in the RPJMD to adapt to the dynamics of risk and field conditions, while also answering research questions about policy direction and the level of integration of adaptive governance principles in regional development.

1) Able People

The Capable People Aspect In the theory of Dynamic Governance, emphasis is placed on the quality and preparedness of government human resources in understanding risks, managing information, and responding to disaster dynamics (Ompusunggu & Setiawan, 2023). In Bojonegoro Regency, the capacity of human resources is crucial, particularly because flooding is a recurring event that necessitates a rapid, accurate, and coordinated response. Therefore, analysis of the Regional Medium-Term Development Plan document and field conditions is necessary to assess the extent to which regional policy structures have been accompanied by adequate human resource capacity to respond to flood risks.

The analysis of the 2025–2029 Bojonegoro Regency Medium-Term Development Plan shows that capacity building is focused on village and sub-district officials as policy implementers at the local level, particularly in planning, budgeting, community empowerment, and regional coordination (RPJMD Chapter III, pp. 317–318). However, this capacity building has not been specifically directed at flood management, so the formation of capable people remains general in nature and is positioned more as an administrative agenda than a strategic instrument of disaster policy. From a dynamic governance perspective, this policy reflects initial efforts to build the capacity of officials, even though the Regional Medium-Term Development Plan also stipulates the improvement of structural and non-structural mitigation of multi-disaster risks (RPJMD Chapter III, pp. 313–314), which implicitly requires the technical competence of officials in flood risk analysis and management.

Field findings indicate that Bojonegoro's human resources are not yet fully capable of meeting the demands of this policy. This was confirmed by an informant from the Regional Development Planning Agency (Bappeda), who stated: *"In general, human resources already understand risk-based planning, but capacity building is still needed, especially in relation to disaster risk analysis and interpretation of hydrometeorological data."* These findings indicate a gap between the demands of risk-based planning policies and the technical capacity of the apparatus, where

conceptual understanding has not been fully accompanied by the necessary analytical and technical capabilities in disaster management.

Field conditions show a gap between the requirements of the medium-term regional development plan policy and the capacity of human resources for planning. The medium-term regional development plan requires village and sub-district officials to develop data-based planning, support structural and non-structural mitigation, and carry out regional coordination. However, the technical capacity of civil servants to understand hydrological data and conduct disaster risk analysis remains limited, as emphasized by Bappeda, which stresses the need to improve this capacity. This condition aligns with the findings (Iswanto et al., 2024), which state that the limited technical capacity of officials leads public policy to tend to stop at the planning document stage and not be implemented adaptively. This shows that strengthening officials' capacity in the RPJMD remains general and has not been specifically directed at flood management in line with regional characteristics.

2) Agile Process

The agile process aspect of dynamic governance highlights how bureaucratic processes can effectively adapt to the evolving landscape of flood risk. This responsiveness is facilitated by quick coordination, flexible procedures, and the ability to adjust actions according to evolving field conditions (Ompusunggu & Setiawan, 2023). Although the 2025–2029 Bojonegoro Regency Medium-Term Development Plan includes flood mitigation policy directions, the document does not specify in detail the operational mechanisms by which the bureaucracy should adaptively respond to emergency conditions. Therefore, the agile process analysis focuses on the gap between formal policy design and field implementation practices.

Based on field findings, it appears that the most agile processes are those involving coordination by local governments when updating risk data. This was conveyed by an informant from Bappeda, who emphasized the importance of rapid response through cross-agency mechanisms: *"We adjust our plans through rapid coordination with other agencies if the latest data indicates a greater risk." (Bappeda interview, November 14, 2025)* This practice shows that the adaptability of the planning process has been implemented, but it has developed as a situational response rather than as part of a formally designed bureaucratic mechanism in regional policy.

In addition to these findings, agile work processes were also evident in the Public Works Agency, which was able to make technical decisions immediately when flood situations were urgent. The technical team can immediately go to the field to deal with clogged channels or damaged drainage networks without waiting for lengthy administrative procedures. On the other hand, BPBD activates a rapid command mechanism through the Rapid Response Team (TRC), utilizing village and sub-district reporting channels and online communication groups that enable early flood information to be immediately received and followed up on. Destana volunteers play an important role in accelerating the delivery of information during floods. Based on interviews, volunteers routinely conduct patrols during heavy rains and convey early signs of flooding to residents through neighborhood association communication channels.

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A comparison between the RPJMD and field conditions shows that agility in flood management is driven more by OPDs' operational practices than by formal planning directives. While the RPJMD outlines mitigation policies in general terms without detailing rapid-response mechanisms or technical coordination, adaptive practices have emerged in implementation but remain weakly institutionalized. Consequently, process agility is situational and experience-based, highlighting a gap between macro-level planning and adaptive implementation and underscoring the limited integration of adaptive bureaucratic mechanisms into regional policy in line with dynamic governance principles.

3) Culture

State Activism

The first aspect of the culture dimension is state activism, a governance culture that positions the government as the primary actor in framing public issues, setting policy directions, and determining development priorities (Ascarya & Harmawan, 2025). In the context of flood management in Bojonegoro Regency, this role is reflected in the 2025–2029 medium-term regional development plan, which explicitly positions disaster resilience as a regional development goal by setting targets for increased environmental sustainability, disaster resilience, and disaster mitigation capacity (RPJMD Chapter III, pp. 348–349). This stipulation shows that the local government consciously raises the issue of disasters, including floods, as a strategic development agenda and not merely a technical issue.

Furthermore, the Regional Medium-Term Development Plan includes a program to strengthen disaster resilience and climate change adaptation as a regional priority program integrated with the quick win "flood disaster management in Bojonegoro Regency" (RPJMD Chapter III, p. 372). In addition, the medium-term regional development plan stipulates the *"Preparation of a master plan for solving water availability problems by relevant cross-agency cooperation" as part of the cross-sector strategic agenda (RPJMD Chapter III, p. 372).* Conceptually, this policy reflects the active role of local governments in setting the direction and coordinating the flood management agenda. However, this role is still dominant at the agenda-setting and planning stages, and has not yet been fully translated into binding implementation control mechanisms that consistently involve all local government agencies.

Field findings show that local governments, through their regional development planning agencies (Bappeda), play an active role in directing and coordinating regional institutions to ensure that flood mitigation programs remain aligned with the medium-term regional development plan, particularly through guidance, monitoring of OPD achievements, and cross-sectoral program synchronization. This reinforces the state's role as a policy director at the planning and coordination levels. Thus, the Bojonegoro district government has demonstrated an active role in setting the agenda and direction of flood mitigation policy through the Regional Medium-Term Development Plan and the role of Bappeda as a policy director. However, this active role has not been fully followed by consistent monitoring of implementation across regional agencies. As a result, state activism is still stronger at the planning stage than in the control of policy implementation.

Long-Term Orientation

The second aspect of long-term orientation in dynamic governance refers to the government's ability to institutionalize sustainable policies, thereby transcending short-term planning cycles and sectoral interests (Ascarya & Harmawan, 2025). Analysis of the Regional Medium-Term Development Plan document shows that the local government positions disaster resilience as part of its medium-term development orientation. *In Chapter II (Overview of Regional Conditions), the RPJMD places disasters, including floods, within the framework of regional resilience and adaptation to climate change, which indicates that flood risk is understood as a recurring and structural phenomenon, rather than an incidental event (RPJMD Chapter II, pp. 54–57).*

The 2025–2029 Bojonegoro Regency Medium-Term Development Plan (RPJMD) shows that the local government views flooding as a long-term strategic issue by integrating disaster resilience and flood mitigation into regional development directions related to climate change and environmental sustainability. However, this orientation has not been fully reflected in institutional arrangements capable of ensuring consistency in implementation across periods and across OPDs.

Field findings reinforce this analysis. Based on interviews with Bappeda, flooding has been understood as a long-term strategic issue that has been included in cross-period planning documents, starting from the RPJPD (Regional Long-Term Development Plan) and then incorporated into the RPJMD (Regional Medium-Term Development Plan) to ensure continuous attention. This shows that a long-term orientation has been internalized at the planning level and among key actors. However, this orientation has not been fully institutionalized in the practices of cross-regional bureaucracies, as each OPD still tends to work according to its own sectoral focus and authority, so the application of a long-term orientation as a common framework has not been uniform.

Thus, the long-term orientation in flood management in Bojonegoro Regency is clear and strong at the planning stage, but has not been fully optimized in its implementation across regional agencies. The main challenge for long-term orientation does not lie in policy commitment, but rather in the limitations of institutional design in ensuring that this orientation consistently binds and directs cross-sectoral bureaucratic practices.

4) Capabilities

Thinking Ahead

The Thinking Ahead aspect of Dynamic Governance assesses a local government's ability to anticipate flood risks through planning and preventive measures before disasters occur (Neo & Chen, 2007). In Bojonegoro Regency, this element is particularly relevant, as flooding poses a recurring annual threat due to both the overflow of the Solo River and high-intensity rainfall. Consequently, this section examines how the 2025–2029 Regional Medium-Term Development Plan planning incorporates anticipatory measures and the degree to which these measures are implemented in practice. This approach aligns with the Regional Medium-Term Development Plan (RPJMD), which emphasizes that

> "*Spatial planning that considers disaster risks is optimally implemented through the construction of disaster-resistant infrastructure, effective drainage systems, improved structural and non-structural mitigation, community resilience, and collaborative flood prevention, risk reduction, and emergency response.*" *(Bojonegoro Regency RPJMD 2025–2029, pp. 280–314).*

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In the context of the thinking-ahead indicator in the Dynamic Governance theory, the policies in the RPJMD indicate that local governments have formally included flood prevention and mitigation in their anticipatory policies since the development planning stage. This is reflected in the inclusion of programs such as strengthening disaster resilience and climate change adaptation, developing a water availability master plan, Disaster Resilient Villages, and a disaster-prone information system as a medium-term planning approach. However, the RPJMD does not yet explain in detail the institutional mechanisms that ensure these anticipatory measures are implemented consistently across regional agencies.

Field findings reinforce the importance of thinking ahead in the planning process, as emphasized by Bappeda, which states that flood risks have been included since the early stages of RPJMD preparation, based on historical data and technical OPD studies. This shows a strong anticipatory orientation at the planning stage, even though the risk assessment results have not yet fully become the basis for decision-making that binds all OPDs. At the technical level, the orientation of thinking ahead is also reflected in preparedness practices before the rainy season, such as updating rainfall data, mapping vulnerable areas, monitoring the Bengawan Solo river discharge, operating an early warning system by the Regional Disaster Management Agency (BPBD), and normalizing rivers and channels by the Public Works Agency (Dinas PU SDA). However, these practices remain sectoral and depend on the initiative of technical OPDs, so they are not yet integrated into a centralized, binding decision-making system.

Source; Nvivo 12

Figure 3. Word Cloude

Based on the findings of field interviews, thinking ahead in the planning process is reinforced. This was confirmed by Bappeda, which stated that "We have included flood risk from the early stages of Regional Medium-Term Development Plan preparation based on historical flood data and technical OPD studies." (Bappeda interview, November 14, 2025). This statement shows that flood mitigation policies are developed proactively, taking into account potential future risks before a disaster occurs.

In terms of planning, Bojonegoro's Regional Medium-Term Development Plan has comprehensively formulated Thinking Ahead through risk prevention and mitigation. However, the implementation of forward thinking in the field has not been fully optimized due to limited coverage of the early warning system, data fragmentation across OPDs, and the

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absence of an institutional mechanism to integrate all risk information into binding policy decisions.

Thinking Again

The aspect of thinking again in dynamic governance emphasizes the government's ability to review flood management policies based on evaluation results and use them as a basis for institutional improvement, which is important considering that flooding in Bojonegoro Regency is recurrent and dynamic. An analysis of the 2025–2029 RPJMD shows that this evaluative element is reflected in development control and evaluation policies through monitoring mechanisms, risk assessment, and program performance assessments, serving as a basis for policy improvement, including flood management (RPJMD, pp. 671–673). However, although the RPJMD acknowledges shortcomings in the previous period, the evaluation has not been fully followed by changes in institutional mechanisms capable of preventing the recurrence of the same problems.

The findings of the interviews show that previous flood management evaluations have identified fundamental problems, including uneven infrastructure, weak synergy among OPDs, and low spatial planning compliance in flood-prone areas. In addition, the evaluation process still faces obstacles due to inconsistent and often late reports from government agencies, resulting in slow, repetitive program improvements, as evidenced by the recurrence of the same flood points year after year. This situation indicates that policy learning is still occurring on a sectoral basis and is not yet coordinated within a centralized and binding evaluation system. From the community's perspective, policy learning is beginning to be felt through improvements in preparedness, such as early warning systems, emergency response centers, and faster responses, although these improvements are considered to have not fully resolved the problem of flooding due to limitations in control infrastructure.

Source; Nvivo 12

Figure 4. Word Cloud

The word frequency results from Thinking Again support this finding. Words like "evaluation," "program," "report," "infrastructure," "constraints," and "local government agencies" appear most prominently, indicating that the main issues of Thinking Again are centered on the quality of evaluation, program follow-up, and performance improvement of local government agencies. The interview findings and the evaluation direction in the RPJMD align with this pattern. Thus, rethinking flood management in Bojonegoro Regency has

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progressed to the evaluation and technical learning stages. However, the results of this evaluation have not been fully institutionalized into policy changes and institutional mechanisms capable of reducing flood risk in a sustainable manner.

Thinking Across

Thinking Across is used in this study to analyze the extent to which flood management in Bojonegoro Regency is shaped by cross-sectoral and cross-regional interactions, and how institutional structures and authority relations influence these patterns of collaboration. The following visualization shows the most frequently occurring words, such as "bpbd," "region," "coordinating," "subdistrict," "forum", "musrenbang", "cross," and "area", which illustrates the strong theme of cross-sectoral collaboration and coordination in flood management practices.

Source; Nvivo 12
Figure 5. Word Cloud

The 2025–2029 Bojonegoro Regency RPJMD demonstrates cross-sector thinking through the promotion of cross-sector and cross-regional cooperation in spatial management and regional development, particularly in strategic areas and watersheds relevant to the Bengawan Solo flood characteristics. The planning document emphasizes the importance of a collaborative approach and the involvement of various stakeholders in flood prevention, risk reduction, and emergency response (RPJMD, pp. 280 & 314). However, in practice, this cooperation has mostly taken the form of program coordination between regional government agencies and has not yet developed into the formulation of integrated substantive joint:

The interview findings show that thinking across practices has been implemented through cross-regional and cross-agency coordination, particularly between local governments and BBWS Bengawan Solo in monitoring upstream conditions and adjusting anticipatory measures in downstream areas, as well as cross-OPD coordination to harmonize flood control programs. Bappeda plays a role in integrating planning through cross-sector forums such as the RKPD and Musrenbang, ensuring that programs across OPDs are mutually supportive. However, this coordination has not been optimal due to differences in authority and priorities between the central and local governments. On the other hand, BPBD has also developed cooperation with the community through the Disaster Resilient Village Program (Destana) as a form of collaboration at the local level.

Thus, Thinking Across in flood management in Bojonegoro Regency has been implemented through cross-sector and cross-regional coordination. However, this

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cooperation is still influenced by differences in authority and institutional structures, so it has not yet produced strong joint policies. The existing coordination is still mostly administrative and technical in nature, and has not yet fully become a cross-actor learning process as expected in the principle of Dynamic Governance. Nevertheless, the practice of Thinking Across has begun to emerge at the community government level through the Disaster Resilient Village (Destana) program, run by BPBD in collaboration with villages and volunteers, as a form of real collaboration in flood mitigation.

5) Change

Adaptive Policy

The Adaptive Policy aspect of flood management in Bojonegoro Regency describes the government's ability to adjust policies based on field conditions and previous flood experiences. In flood management in Bojonegoro Regency, these changes are necessary because floods do not always occur in the same location every year, their impacts vary, and the needs of the community in the field also change after a flood. Due to these changing flood conditions, the government cannot simply follow old plans but must adjust its strategies to ensure that flood management remains effective.

The 2025-2029 Regional Medium-Term Development Plan itself provides room for change when targets are not achieved. This is in line with the findings of interviews in which BAPPEDA explained that the government can adjust annual targets after extreme flooding occurs so that planning remains relevant. In the field, adaptation is clearly seen in the BPBD updating its flood management SOPs, changing evacuation routes, and adjusting emergency communication patterns based on the experience of the last flood. The Public Works and Water Resources Agency also shifted its priorities from river normalization and drainage improvements to new points that emerge every rainy season. At the village level, Destana adjusted assembly points and evacuation routes according to the latest flood conditions. At the village level, the Disaster Resilient Village Program (Destana) adjusted assembly points and preparedness mechanisms according to the changing characteristics of floods.
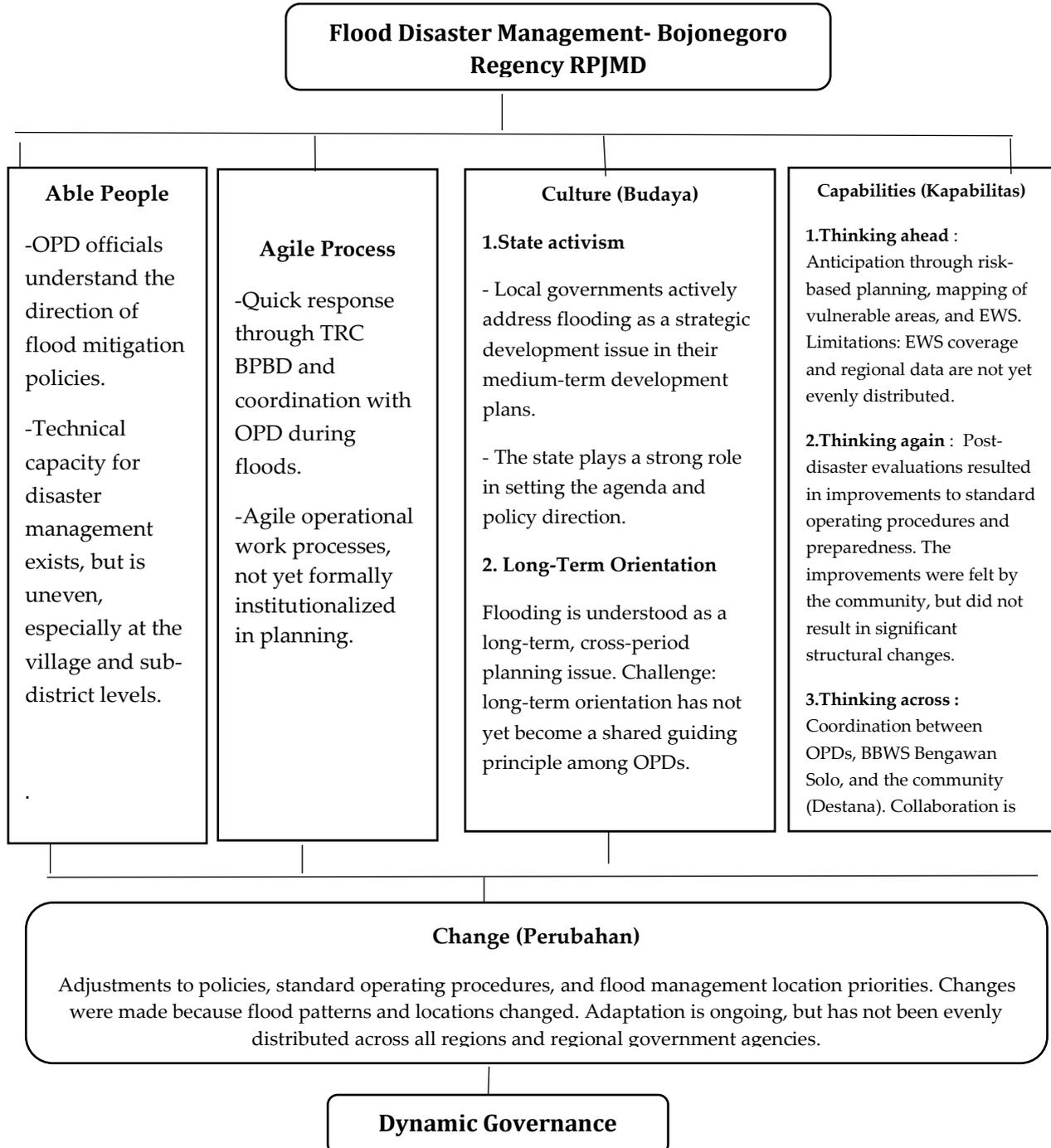
Changes in flood management policies in Bojonegoro Regency were made in response to dynamic flooding patterns in terms of location, intensity, and impact, as well as limitations in control infrastructure and the emergence of new hotspots. This shows that an adaptive policy has been implemented through adjustments based on evaluations of experience and current conditions. However, this adaptation is still gradual and uneven across regions and local government agencies, so the main challenge lies in strengthening consistency and expanding the application of adaptive policies in order to respond to flood dynamics more comprehensively.

Challenges in Implementing Flood Management Policies

Flood management in the 2025–2029 Bojonegoro Regency Medium-Term Development Plan (RPJMD) presents several major challenges in policy implementation. Coordination between OPDs involved in flood management is hampered by differences in priorities and authority between different sectors. The capacity of technical human resources in managing flood risks is still limited, with some OPDs not yet fully understanding how to optimally use

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hydrological data and disaster information systems. In addition, infrastructure limitations, such as inadequate drainage and early warning systems that do not yet cover all flood-prone areas, also slow down rapid response to disasters. Limitations in coordination between regions and between the central and regional governments are also a major challenge in ensuring effective policy implementation. Coordination with BBWS Bengawan Solo and other external parties is still limited to information exchange and technical monitoring, but has not yet reached the stage of formulating comprehensive joint policies.

Flood Disaster Management- Bojonegoro Regency RPJMD

Able People

-OPD officials understand the direction of flood mitigation policies.

-Technical capacity for disaster management exists, but is uneven, especially at the village and sub-district levels.

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Agile Process

-Quick response through TRC BPBD and coordination with OPD during floods.

-Agile operational work processes, not yet formally institutionalized in planning.

Culture (Budaya)

1.State activism

- Local governments actively address flooding as a strategic development issue in their medium-term development plans.

- The state plays a strong role in setting the agenda and policy direction.

2. Long-Term Orientation

Flooding is understood as a long-term, cross-period planning issue. Challenge: long-term orientation has not yet become a shared guiding principle among OPDs.

Capabilities (Kapabilitas)

1.Thinking ahead : Anticipation through risk-based planning, mapping of vulnerable areas, and EWS. Limitations: EWS coverage and regional data are not yet evenly distributed.

2.Thinking again : Post-disaster evaluations resulted in improvements to standard operating procedures and preparedness. The improvements were felt by the community, but did not result in significant structural changes.

3.Thinking across : Coordination between OPDs, BBWS Bengawan Solo, and the community (Destana). Collaboration is

Change (Perubahan)

Adjustments to policies, standard operating procedures, and flood management location priorities. Changes were made because flood patterns and locations changed. Adaptation is ongoing, but has not been evenly distributed across all regions and regional government agencies.

Dynamic Governance

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Conclusion

Research This study concludes that flood disaster management in the 2025–2029 Bojonegoro Regency Medium-Term Development Plan (RPJMD) has led to the application of the principles of Dynamic Governance, both in the policy planning and implementation stages. The local government has a clear policy direction, making flooding a strategic development issue. However, there are still limitations in its implementation, especially in the aspects of Able People and Agile Process, such as uneven technical capacity of the apparatus and inconsistent cross-sector coordination. In addition, the elements of Culture, Capabilities (Thinking Ahead, Thinking Again, Thinking Across), and Change show that the local government's adaptive mindset has begun to take shape, but has not yet fully resulted in policies that can comprehensively address flood issues.

This study recommends that the Bojonegoro Regency Government strengthen the capacity of its apparatus through training and improving technical competencies related to flood risk analysis, as well as developing an integrated information system so that cross-sector coordination processes run more quickly and consistently. The government also needs to make flood evaluation a basis for policy learning, not just an administrative formality, so that mitigation strategies can develop adaptively. In addition, cross-regional and stakeholder cooperation needs to be strengthened to ensure that flood mitigation policies are not only reactive but also long-term and capable of dealing with evolving risks.

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Journal of
Transformative Governance and Social Justice

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Date: 29 January 2026

Number : B.05/J-TRAGOS/FISIP-AP/I/2026
Attachment : -
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Dear,
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Warm Greetings!
It's a great pleasure to inform you that, after the peer review process, your article,
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C. Profil OJS

1). Nama : Journal of Transformative Governance and Social Justice

2). Alamat OJS: https://jurnal.unmer.ac.id/index.php/jtragos/index

3). Kontak atau Email editor OJS : j-tragos@unmer.ac.id

4). Judul Penelitian : Analysis of Flood Disaster Management in Regional Medium-Term Development Plans: A Dynamic Governance Perspective

5). Nama Dosen Pembimbing 1 dan Pembimbing 2 : Septi Wulandari S, M. A. P, Musta'ana, S. Sis., M. Si

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