

Local Government Coordination in Flood Mitigation Policy: Insights from Cirebon

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Abstract

Flood mitigation in Indonesian coastal cities depends not only on infrastructure but on how local government institutions coordinate across sectors and administrative levels. Cirebon, a dual river-and-tidal flood-prone city on the north coast of West Java, exemplifies coordination challenges of Indonesia's decentralised disaster governance, where the city, regency, technical agencies, and community actors operate with overlapping mandates. This study examines how local government coordination is structured, practised, and constrained in flood mitigation policy. Data were collected through interviews with 22 key informants from eight institutions, two focus group discussions, field observation, and document analysis, analysed using the Miles and Huberman interactive model with inter-coder reliability verification. Findings show coordination operates through three overlapping mechanisms: formal command-line coordination led by the Regional Disaster Management Agency (BPBD), semi-formal multi-stakeholder forums, and informal digital communication channels. Effectiveness is constrained by fragmented budget authority, the city-regency administrative split, weak SOP enforcement, and limited real-time data sharing, while community-based early warning groups and sustained leadership commitment act as key enablers. The study offers context-specific evidence for strengthening cross-sector flood governance in mid-sized Indonesian coastal cities.

Keywords: local government coordination; flood mitigation; disaster governance; collaborative governance; Cirebon.

Received: 17 June 2026

Revised: 17 August 2026

Published: 31 August 2026

1. Introduction

Flooding is among the most recurrent and economically damaging hazards affecting Indonesia's coastal cities, and its management is inseparable from the quality of coordination among the institutions responsible for prevention, response, and recovery (Prasetyo et al., 2024). Unlike single-cause hazards, flood risk in coastal urban areas typically results from the interaction of multiple physical drivers—river discharge, land subsidence, rainfall intensity, and tidal inundation—each of which falls under the administrative authority of different government agencies (Dewi et al., 2023; He et al., 2026). Effective flood mitigation therefore depends less on any single agency's technical capacity than on the extent to which planning, information, and resources are synchronised across the many actors who share responsibility for a common hazard (Alhadi et al., 2026; Trimurni et al., 2024).

Cirebon, located on the north coast of West Java, is a particularly instructive case for examining this coordination problem. The city is administratively divided into two separate local government units—Kota Cirebon (Cirebon City) and Kabupaten Cirebon (Cirebon Regency)—that share a single hydrological system but operate under distinct budgets, regional regulations, and disaster management agencies. The coastal sub-districts of both jurisdictions are exposed to tidal flooding (*banjir rob*) driven by land subsidence and sea-level dynamics, while inland areas experience periodic river flooding from the Kalijaga and Sukalila watersheds during the wet season. This dual exposure, combined with the administrative split between city and regency governments, creates a structurally complex coordination environment that mirrors challenges documented elsewhere in Indonesia's decentralised disaster management system, where local

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government failures in coordination have been linked to delayed response, duplicated efforts, and unclear lines of authority (Fikri et al., 2025; Muhibbin et al., 2025).

A substantial international literature has examined collaborative and network-based approaches to flood risk governance, demonstrating that resilience outcomes depend heavily on the density, trust, and formal structure of coordination networks among government, private, and community actors (Jiang, 2026; Ma et al., 2025; McNaught, 2024; Meerow et al., 2024). Within Indonesia specifically, recent studies have documented coordination and governance gaps in flood-prone regions such as Batu City (Muhibbin et al., 2025), Bangkalan Regency (Maysaroh et al., 2025), the Ciliwung River basin (Rahayu et al., 2024), Central Java's rapidly urbanising districts (Dewi et al., 2023), and the coastal Subang area (Soejarwo et al., 2026). However, this body of work has concentrated overwhelmingly on Java's largest metropolitan regions or on single-jurisdiction cases, leaving a gap in empirical understanding of how coordination unfolds in mid-sized, dual-jurisdiction coastal cities where tidal and river flood risks converge across an administrative boundary. Cirebon's twin exposure to riverine and tidal flooding, combined with its bifurcated city-regency governance structure, therefore represents an under-examined configuration that existing collaborative governance and decentralisation literature has not yet directly addressed (Abdillah et al., 2025; Agustina et al., 2024). Building on this gap, the present study is motivated by three interrelated objectives: first, to map the institutional structure and actors involved in flood mitigation coordination across Kota and Kabupaten Cirebon; second, to identify the coordination mechanisms—formal, semi-formal, and informal—through which these actors actually interact in practice; and third, to examine the structural and behavioural barriers and enablers that shape coordination effectiveness, with a view to generating context-grounded policy recommendations for strengthening cross-sector flood governance in similarly structured coastal regions.

2. Literature Review

2.1. Local Government Coordination in Disaster Governance

Coordination among government institutions in disaster management refers to the deliberate alignment of planning, resources, authority, and information flows among multiple actors who share responsibility for hazard prevention, response, and recovery, but who typically operate under separate legal mandates and budget lines (Trimurni et al., 2024). In decentralised governance systems, this coordination challenge is compounded by the vertical division of authority between national, provincial, and local governments, and by the horizontal fragmentation of technical responsibilities across sectoral agencies (Alhadi et al., 2026). Intergovernmental network studies have shown that local government capacity for disaster management is strongly mediated by the density and quality of inter-agency ties rather than by the resource endowment of any single institution acting alone (Cai et al., 2023; Chen & Zhang, 2026; Sun et al., 2025). Where these ties are weak or ad hoc, coordination tends to default to informal, personality-dependent channels rather than institutionalised procedures, undermining the reliability of collective action during actual emergencies (Fikri et al., 2025).

2.2. Collaborative Governance and Flood Risk Management

Collaborative governance theory frames effective flood risk management as an emergent property of networked relationships among government, private sector, and civil society actors, rather than a function of top-down command alone (Ma et al., 2025; McNaught, 2024). Comparative studies of urban flood governance networks in coastal cities have found that resilience outcomes correlate with the extent to which formal governance networks are embedded within, and reinforced by, broader networks of spatial plans and community institutions (Meerow et al., 2024). Emerging research on "smart" and diagnostic approaches to flood governance further suggests that transforming emergency capabilities requires not only technological investment but also open, transparent information-sharing arrangements among coordinating agencies (He et al., 2026; Jiang, 2026; Okunola et al., 2026). At the same time, cross-national comparisons caution that collaborative governance arrangements can just as easily produce deadlock as innovation when actors' incentives are poorly aligned or when coordinating platforms lack real decision-making authority (McNaught et al., 2024; Nguyen et al., 2025).

2.3. Flood Mitigation Policy and Institutional Challenges in Indonesia

Within the Indonesian context, several recent studies converge on the finding that decentralisation, while intended to bring disaster management closer to affected communities, has in practice produced fragmented and inconsistently enforced flood governance arrangements. Fikri et al. (2025) documented systemic problems of decentralised disaster management stemming from unclear divisions of authority between national and local government layers. Muhibbin et al. (2025) found that spatial planning failures in Batu City were directly attributable to weak enforcement coordination

between planning and disaster agencies, while Maysaroh et al. (2025) showed that regional flood-control regulations in Bangkalan Regency suffered from limited implementation capacity at the sub-district level. Rahayu et al. (2024) similarly identified transboundary coordination failures in the Ciliwung River basin, where upstream-downstream jurisdictions lacked a shared governance mechanism despite sharing a single flood risk system—a structural parallel to Cirebon's city-regency configuration. Dewi et al. (2023) linked rapid, poorly coordinated urban growth in Central Java to rising flood vulnerability, and Soejarwo et al. (2026) emphasised that risk communication in Indonesia's coastal areas remains fragmented across the many actors responsible for hazard information dissemination. Collectively, these studies establish flood mitigation coordination as a persistent institutional weak point in Indonesia's decentralised governance system, even as national frameworks increasingly call for multi-stakeholder disaster risk reduction forums (Abdillah et al., 2025; Agustina et al., 2024; Prasetyo et al., 2024).

2.4. *Determinants of Coordination Effectiveness*

A parallel strand of literature identifies the structural and behavioural determinants that make coordination arrangements succeed or fail in practice. Stakeholder collaboration frameworks emphasise the importance of clearly defined roles, shared information systems, and sustained leadership commitment as preconditions for effective multi-actor disaster response (Johnson et al., 2022; Poling & Shealy, 2025). Comprehensive resilience indices point to the interaction between institutional capacity and community-level preparedness as a stronger predictor of outcomes than infrastructure investment alone (Gan et al., 2026; Khan et al., 2022). Studies of green infrastructure and nature-based flood management further suggest that coordination extends beyond emergency response into long-term spatial and environmental planning, requiring durable cross-sector institutional linkages rather than event-triggered cooperation (Takin et al., 2023; Wang et al., 2022). Public-private collaboration models, including risk-transfer and insurance mechanisms, have also been shown to depend on the same underlying coordination infrastructure that governs routine emergency management (Liu et al., 2025). Taken together, this literature suggests that coordination effectiveness in flood mitigation is best understood as a multi-dimensional construct encompassing formal authority structures, information infrastructure, resource allocation mechanisms, and the informal trust relationships that bind individual actors across agency boundaries (Dania & Juwitasari, 2025; Li et al., 2025; Pazhuhan & Amirzadeh, 2024; Zhai & Lee, 2024).

3. **Methods**

3.1. *Research Design and Approach*

This study employs a qualitative case study design, selected because the research questions concern the how and why of institutional coordination processes that cannot be adequately captured through numerical measurement alone (Ray-Bennett, 2025). A case study approach is particularly appropriate for examining coordination as a socially embedded, context-dependent phenomenon, allowing the researcher to trace the interaction between formal institutional structures and the informal practices through which local government actors actually coordinate flood mitigation activities on the ground (Manda & Mumbo Thindwa, 2025). The design combines semi-structured interviews, focus group discussions, field observation, and document analysis to enable methodological triangulation.

3.2. *Research Location*

The study was conducted in Cirebon, encompassing both Kota Cirebon and the adjoining coastal sub-districts of Kabupaten Cirebon. Three flood-prone sub-districts were purposively selected within Kota Cirebon—Kejaksan, Lemahwungkuk, and Pekalipan—representing areas repeatedly affected by tidal inundation and drainage overflow, together with two coastal sub-districts of Kabupaten Cirebon, Gunungjati and Suranenggala, which share the same tidal and river system but fall under separate regency administration. This cross-jurisdictional selection was intended to capture the coordination dynamics that occur specifically at the administrative boundary between the two local governments.

3.3. *Informants and Sampling Procedure*

Informants were selected using purposive sampling, targeting individuals with direct institutional responsibility for, or field-level involvement in, flood mitigation coordination. A total of 22 informants were interviewed across eight institutions, comprising officials from the Regional Disaster Management Agency (BPBD) of both the city and the regency, the Public Works and Spatial Planning Agency (*Dinas PUPR*), the Regional Development Planning Agency (*Bappeda*), sub-district heads (*camat*) and village heads (*lurah*), community-based disaster preparedness volunteers

(*Kampung Siaga Bencana*), and representatives of a local non-governmental organisation active in disaster risk reduction. Table 1 summarises the composition of informants by institution and role.

Table 1. Composition of Key Informants By Institution and Role (N = 22)

Institution/Group	Role of Informant	Number of Informants
Cirebon City Regional Disaster Management Agency (BPBD)	Head of Emergency & Logistics Division, Field Coordinators	4
Cirebon Regency Regional Disaster Management Agency (BPBD)	Head of Prevention & Preparedness Division, Field Coordinators	4
Dinas PUPR (City & Regency)	Drainage and Infrastructure Planning Staff	3
Bappeda (City & Regency)	Spatial and Development Planning Staff	2
District/Urban Village	Camat and Lurah in Flood-Prone Sub-Districts	4
Disaster-Ready Village	Community Disaster-Preparedness Volunteers	3
Local NGO (Forum PRB)	Disaster Risk Reduction Forum Coordinators	2

3.4. Data Collection Techniques

Primary data were collected through in-depth semi-structured interviews with all 22 informants, conducted between January and April 2026, each lasting approximately 45–75 minutes and guided by an interview protocol covering institutional roles, coordination mechanisms, communication channels, and perceived barriers. Two focus group discussions (FGDs) were conducted, one bringing together technical agency representatives from both jurisdictions and one bringing together sub-district officials and community volunteers, to observe coordination dynamics in a group setting and to cross-check individual interview accounts. Field observation was carried out during a simulated flood-response coordination exercise organised by Cirebon City Regional Disaster Management Agency (*BPBD Kota Cirebon*), allowing direct observation of communication flows among agencies. Secondary data were obtained through document analysis of the Regional Disaster Management Plan (*Rencana Penanggulangan Bencana*), standard operating procedures (SOP) for flood emergency response, and inter-agency memoranda of understanding held by both the city and regency governments.

3.5. Data Analysis

Data were analysed using the Miles and Huberman interactive model, comprising three concurrent stages: data condensation, data display, and conclusion drawing/verification. Interview transcripts and field notes were coded thematically using a coding framework derived deductively from the collaborative governance and intergovernmental coordination literature (McNaught, 2024; Trimurni et al., 2024), and refined inductively as new themes emerged from the data. To strengthen analytical rigour, coding was independently performed by two coders on a random 30% subsample of transcripts, and inter-coder agreement was assessed using Cohen's Kappa, which corrects the observed agreement between coders for the agreement expected by chance given the marginal distribution of codes. Agreement reached $\kappa = 0.81$, indicating almost perfect agreement by conventional benchmarks and supporting the reliability of the coding scheme. To indicate how widely each coordination-related theme was represented across the sample, the proportion of informants whose transcripts referenced a given theme was recorded as a descriptive indicator and is reported in Table 4; this proportion conveys only the spread of a theme across the 22 informants and is not treated as an inferential statistic or as a substitute for interpretive analysis.

3.5.1. Coding Framework and Thematic Saturation

Coding proceeded iteratively as interviews were completed in three sequential tranches. An initial deductive framework (Table 2) was derived from the collaborative-governance and intergovernmental-coordination literature and populated during the first tranche; a small number of inductive codes—most notably the substitution of informal WhatsApp channels for formal reporting, and the recurrent “reset” of city–regency joint budgeting each cycle—were added during

the second tranche. By the final tranche, no substantively new codes emerged and the remaining interviews served only to confirm and elaborate existing codes, indicating that thematic saturation had been reached within the 22-informant sample spanning eight institutions. The purposive design deliberately maximised institutional and hierarchical diversity—city and regency BPBD, technical agencies, sub-district and village officials, community volunteers, and an NGO forum—so that saturation reflects breadth of institutional vantage points rather than repetition within a single actor type. Table 3 summarises the emergence of new codes across the interview sequence.

Table 2. Thematic coding framework: deductive categories, representative codes, and illustrative indicators

Deductive category	Representative codes	Illustrative indicator from data
Coordination structure	Formal command hierarchy; vertical linkage (province–local–sub-district); horizontal cross-agency linkage	BPBD convening Dinas PUPR, Bappeda, DLH; provincial guidance role
Coordination mechanisms	Formal command-line; semi-formal forums; informal digital; community relay	BPBD SOP activation; Forum PRB; WhatsApp groups; Kampung Siaga Bencana
Barriers	City–regency split; budget silos; weak SOP enforcement; limited real-time data sharing	“Starting from zero” each budget cycle; absence of a shared dashboard
Enablers	Leadership commitment and continuity; community early warning; interpersonal trust	Named BPBD division head; volunteers detecting rising water first; Forum PRB trust

Table 3. Emergence of new codes across the interview sequence (n = 22)

Interview tranche	Interviews	New codes emerging	Cumulative codes
Tranche 1	1–8	11 (initial deductive set populated)	11
Tranche 2	9–16	3 (inductive additions)	14
Tranche 3	17–22	0 (saturation reached)	14

3.6. Trustworthiness of Findings

The trustworthiness of the findings was established through source triangulation (comparing accounts across institutions and hierarchical levels), method triangulation (comparing interview, FGD, observation, and document data), and member checking, in which a summary of preliminary findings was shared with four senior informants for verification prior to finalisation. These procedures are consistent with established qualitative rigour practices in disaster governance research (Manda & Mumbo Thindwa, 2025; Ray-Bennett, 2025).

4. Result and Discussion

4.1. Flood Profile and Institutional Landscape in Cirebon

Document analysis and informant accounts confirm that flooding in Cirebon has intensified over the past six years, driven by a combination of increasing tidal inundation and more frequent high-intensity rainfall events. Figure 1 presents the reported trend in flood events across the two flood types recorded by Cirebon City and Cirebon Regency Regional Disaster Management Agency (*BPBD Kota dan Kabupaten Cirebon*) between 2019 and 2024, illustrating a consistent upward trajectory in both river flooding and, more markedly, tidal (rob) flooding.

To verify that the upward trajectory in Figure 1 is statistically robust rather than merely apparent, a non-parametric Mann–Kendall trend test with Sen's slope estimator was applied to the annual event counts for each flood type (2019–2024). The test confirms a statistically significant monotonic increase for tidal (rob) flooding (Kendall's $\tau = 1.00$, $S = 15$, $p = 0.009$; Sen's slope ≈ 3.2 events per year) and for river flooding ($\tau = 0.87$, $S = 13$, $p = 0.024$; Sen's slope ≈ 1.2 events per year). The substantially steeper slope for tidal flooding indicates that rob inundation is intensifying more rapidly than riverine flooding, corroborating informants' characterisation of it as the more structurally intractable hazard.

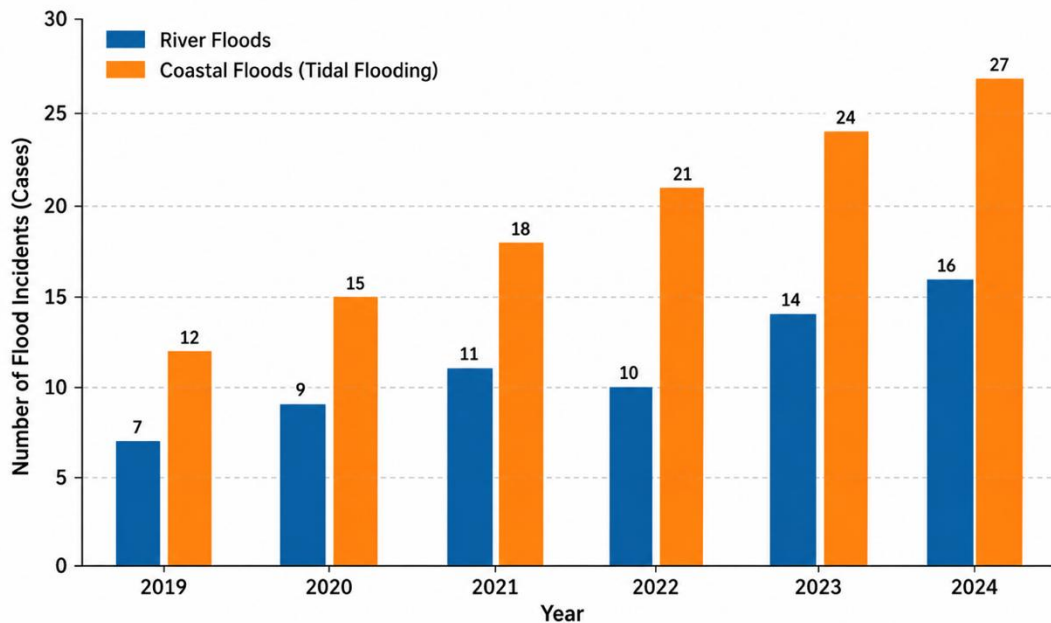


Figure 1. Trend of Reported Flood Events in Cirebon City and Regency, 2019–2024

Informants consistently described tidal flooding as the more structurally difficult hazard to manage, since its root causes—land subsidence and sea-level dynamics—fall largely outside the direct control of local government instruments, whereas river flooding is more directly addressed through drainage and infrastructure interventions under *Dinas PUPR*'s mandate. This distinction matters for coordination because it means that the two flood types activate different, only partially overlapping, sets of institutional actors, a pattern consistent with findings that flood risk governance networks must accommodate multiple, structurally distinct hazard pathways rather than a single undifferentiated "flood" category (Dewi et al., 2023; He et al., 2026).

4.2. Coordination Structure Mapping

Institutional mapping based on document analysis and interview accounts identifies a five-tier coordination structure linking the provincial disaster management agency down to community-level actors, as depicted in Figure 2. At the apex, the West Java Provincial Disaster Management Agency (*BPBD Provinsi Jawa Barat*) provides technical guidance and supra-local resource support. The Cirebon City/Regency Disaster Management Agency (*BPBD Kota/Kabupaten Cirebon*) functions as the principal local coordinator, formally responsible for convening technical agencies—the Public Works and Spatial Planning Agency (*Dinas PUPR*), the Environmental Agency (*Dinas Lingkungan Hidup*), the Social and Health Agency (*Dinas Sosial dan Kesehatan*), and security/evacuation actors including the Indonesian Armed Forces and National Police (TNI/Polri) and the National Search and Rescue Agency (*Basarnas*). Below this technical tier, sub-district and village governments (*kecamatan/kelurahan*) serve as the operational interface with the community, working alongside the multi-stakeholder Disaster Risk Reduction Forum (*Forum Pengurangan Risiko Bencana*, or *Forum PRB*), before reaching community-based structures such as disaster-alert village groups (*Kampung Siaga Bencana*).

The mapping also clarifies the limited practical reach of provincial oversight. While the West Java Provincial BPBD (*BPBD Provinsi Jawa Barat*) sits formally at the apex of the structure, informants characterised its role as one of technical guidance and supra-local resource mobilisation rather than active arbitration of city–regency disputes. During coordination frictions between the two local governments, the province was rarely invoked as a binding adjudicator; its interventions were episodic and typically confined to large-scale events exceeding local response capacity. This gap between the province's nominal supervisory position and its limited day-to-day intervention capacity reflects a wider pattern in Indonesia's decentralised system, in which the vertical division of authority leaves intermediate tiers with supervisory titles but weak enforcement instruments over autonomous local governments (Alhadi et al., 2026; Fikri et al., 2025).

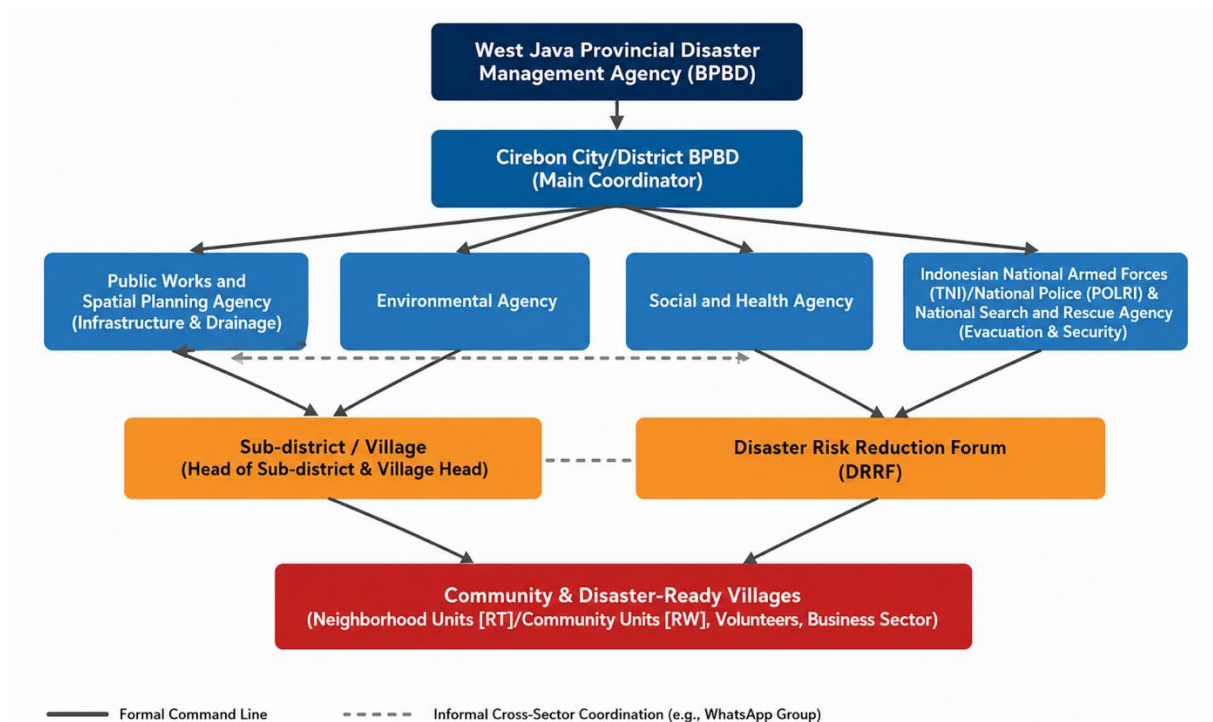


Figure 2. Institutional Coordination Structure for Flood Mitigation in Cirebon

A critical structural feature revealed by this mapping is that the formal command line depicted by the solid arrows in Figure 2 exists in parallel with informal, dashed cross-sector linkages—most notably ad hoc WhatsApp coordination groups connecting technical agency staff directly with sub-district officials, bypassing the formal reporting hierarchy. Several informants indicated that during actual flood events, these informal channels were often faster and more heavily relied upon than the formal command structure, echoing findings elsewhere that informal network ties frequently substitute for, rather than merely supplement, formal coordination structures when the latter are slow or bureaucratically encumbered (Cai et al., 2023; Sun et al., 2025). A comparable pattern has been documented in Indonesian local legislative digitalisation, where formal digital platforms improved procedural responsiveness but did not displace informal, relationally-grounded communication channels such as WhatsApp, which citizens and officials continued to treat as more immediate and trustworthy (Khairunnisa & Fitriyah, 2026). A similar dual-track pattern has been reported in rural village governance more broadly, where local governments increasingly rely on WhatsApp groups to communicate with communities and coordinate activities, enhancing administrative efficiency and participation while simultaneously creating new exclusionary risks for less digitally connected residents (Nendi, 2025).

Read as a coordination network, this structure places BPBD in a brokerage position: it is the only actor formally tied to every tier, giving it the highest betweenness in the formal network, while the city and regency clusters remain only weakly connected laterally across the administrative boundary—a structural hole that informal WhatsApp ties partially, but not reliably, bridge. Tie strength is uneven: vertical command ties and intra-jurisdiction horizontal ties are dense and routinely activated, whereas cross-jurisdiction (city–regency) ties are sparse and episodic. These relational features are characterised qualitatively from informant accounts and documentary evidence; a formal sociometric social network analysis quantifying centrality, density, and tie strength was beyond the relational data collected under this qualitative design and is identified in Section 5 as a priority for subsequent research.

4.3. Coordination Mechanisms Identified

Thematic analysis identified three overlapping coordination mechanisms operating in Cirebon's flood mitigation system: formal command-based coordination anchored in BPBD's statutory authority, semi-formal multi-stakeholder forums such as Forum PRB and periodic joint planning meetings, and informal digital communication channels. Table 4 summarises these mechanisms together with the proportion of informants referencing each, expressed as a thematic-frequency (TF) percentage.

Table 4. Coordination mechanisms and thematic frequency across informants (N = 22)

Coordination Mechanism	Description	TF (%)	Perceived Reliability
Formal Command-Line Coordination	BPBD-Led Activation Of Sop, Formal Reporting To Sub-District And Technical Agencies	100.0	Moderate–High
Semi-Formal Multi-Stakeholder Forums	Forum PRB Meetings, Joint City-Regency Planning Sessions	72.7	Moderate
Informal Digital Coordination	Whatsapp Groups Linking Field Staff Across Agencies And Sub-Districts	90.9	High (speed), Low (accountability)
Community Early-Warning Networks	Kampung Siaga Bencana Volunteer Relay Systems	68.2	High (local), Low (scale)

The near-universal reference to formal command-line coordination (TF = 100.0%) confirms that BPBD's statutory role is widely recognised as the nominal centre of coordination, consistent with its designation under national disaster management regulation. However, the high thematic frequency of informal digital coordination (TF = 90.9%) alongside a comparatively lower perceived accountability rating indicates a persistent gap between the *de jure* coordination structure and the *de facto* practices through which coordination is actually accomplished—an observation consistent with intergovernmental network research showing that informal ties often carry the practical burden of real-time coordination even where formal command structures remain nominally intact (Chen & Zhang, 2026; Trimurni et al., 2024). This mirrors a hybrid governance configuration identified in subnational digital governance research, in which formalised institutional mechanisms and persistent informal relational practices operate side by side rather than one substituting for the other (Khairunnisa & Fitriyah, 2026).

4.4. Barriers to Effective Coordination

Four principal barriers to effective coordination emerged from the data. First, the administrative split between Kota and Kabupaten Cirebon was repeatedly identified as a structural constraint: because the two governments maintain separate budgets, separate BPBD leadership, and separate regional regulations, joint flood mitigation investments—such as shared drainage infrastructure spanning the administrative boundary—require protracted inter-governmental negotiation that several informants described as "starting from zero" each budget cycle. This finding closely parallels the transboundary coordination failures documented in the Ciliwung River basin, where upstream and downstream jurisdictions similarly lacked a binding shared-governance mechanism despite sharing a single hydrological system (Rahayu et al., 2024).

Second, budget silos within each jurisdiction were reported to constrain cross-agency collaboration even within a single local government: Dinas PUPR and BPBD each control separate line-item budgets for flood-related activities, with limited formal mechanisms for pooling resources around joint interventions. Third, weak enforcement of standard operating procedures was cited by technical agency informants as undermining the reliability of the formal command structure during actual events, a pattern consistent with broader findings that decentralised disaster management systems in Indonesia often possess adequate procedural documentation but insufficient enforcement capacity (Fikri et al., 2025; Muhibbin et al., 2025). This mirrors a broader pattern identified in Indonesian public administration research, where good governance laws are formally codified but their practical effectiveness is undermined by bureaucratic inefficiencies, limited public awareness, and weak enforcement mechanisms across sectors (Sutrisno, 2025). Fourth, limited real-time data sharing—particularly the absence of a shared flood monitoring dashboard accessible to both jurisdictions—was identified as a persistent operational gap, forcing agencies to rely on manual, delayed reporting even for time-sensitive tidal flood warnings. This deficiency echoes findings on digital governance implementation in Indonesia more broadly, where regulatory frameworks for secure and reliable digital infrastructure exist but their enforcement and technical uptake remain inconsistent across institutions (Magfiroh et al., 2024).

4.5. Enabling Factors

Despite these barriers, informants identified several factors that actively strengthen coordination. Sustained leadership commitment at the BPBD Kota Cirebon level, attributed by multiple informants to a specific head of division who had

prioritised inter-agency relationship-building over several years, was described as a decisive enabler of effective response during the 2023 and 2024 flood seasons—consistent with the broader finding that leadership continuity, rather than formal structure alone, is a strong predictor of coordination effectiveness (Johnson et al., 2022; Poling & Shealy, 2025). Community-based early warning through disaster-alert village (Kampung Siaga Bencana) groups was similarly identified as an enabling factor that compensates for gaps in formal agency-level coordination, particularly in the tidal flood-prone urban villages (kelurahan) where community volunteers often detect and report rising water levels faster than official monitoring infrastructure. The existence of Forum PRB as a standing multi-stakeholder platform, even though only semi-formally institutionalised, was also credited with building the interpersonal trust that underlies much of the informal coordination documented in Section 4.3, echoing collaborative governance research emphasising trust as a foundational enabler of network-based disaster coordination (Choi & Yoon, 2025; Gui et al., 2026; Ma et al., 2025).

A recurring policy tension concerns how community-based structures such as Kampung Siaga Bencana can be sustained without eroding the organic community trust that makes them effective. Informants valued these groups precisely because they are locally embedded and voluntary rather than bureaucratically directed; formalising them through municipal budget lines risks converting trusted neighbours into the lowest rung of an administrative hierarchy. A workable path is to channel sustained institutional support—training, equipment, modest operational stipends, and insurance for volunteers—through village and kelurahan budget allocations and the Forum PRB rather than through direct agency control, preserving community ownership while supplying the continuity that purely voluntary arrangements cannot guarantee. This is consistent with evidence that community participation and cultural embeddedness predict disaster resilience more strongly than infrastructure spending alone (Gan et al., 2026), and that collaborative networks endure where external support reinforces rather than supplants community agency (Choi & Yoon, 2025; Gui et al., 2026).

4.6. Discussion: Structural Fragmentation and the Limits of Formal Authority

The collective evidence from this study depicts a coordination system in which formal institutional authority, vested primarily in BPBD, coexists with—and is substantially supplemented by—informal and semi-formal mechanisms that fill gaps left by structural fragmentation between the city and regency governments. This pattern is broadly consistent with international collaborative governance literature suggesting that flood resilience outcomes depend on the density of governance networks rather than on the formal authority of any single lead agency (McNaught, 2024; Meerow et al., 2024). This resonates with evidence from rural digital innovation systems research, which cautions that technology-enabled institutional change is not deterministic but is instead mediated by pre-existing institutional configurations, power dynamics, and community capacity to appropriate digital tools for local purposes (Nendi, 2025). However, the Cirebon case also illustrates a risk highlighted by comparative research on collaborative governance: that heavy reliance on informal coordination channels, while operationally effective in the short term, can produce accountability gaps and inconsistent institutional memory when key individuals change positions, a vulnerability noted in cross-national studies of governance innovation and deadlock (Manda & Mumbo Thindwa, 2025; McNaught et al., 2024). This gap between formally granted institutional authority and its practical exercise is not unique to disaster governance: comparative constitutional and parliamentary research shows a similar pattern in which formally guaranteed powers—such as an opposition's constitutional right to initiate legislation—are substantially constrained in practice by a dominant actor's control over the institutional agenda, whether that actor is a government vis-à-vis a parliamentary opposition or a lead disaster agency vis-à-vis fragmented local counterparts (Nassar, 2026).

The administrative boundary between Kota and Kabupaten Cirebon emerges as the single most consequential structural barrier identified in this study, reinforcing findings from the Ciliwung basin that transboundary flood risk governance in Indonesia lacks adequate binding coordination mechanisms at the sub-provincial level (Rahayu et al., 2024). This suggests that policy interventions focused solely on strengthening BPBD's internal capacity, without addressing the inter-jurisdictional coordination gap directly, are unlikely to resolve the structural fragmentation documented here. Comparable findings from Batu City and Bangkalan Regency (Maysaroh et al., 2025; Muhibbin et al., 2025) similarly point to weak enforcement and implementation capacity as recurring features of Indonesian local flood governance, suggesting that the challenges observed in Cirebon are not idiosyncratic but reflect a broader institutional pattern warranting attention in national disaster management policy (Prasetyo et al., 2024; Abdillah et al., 2025). The proposed shared, real-time flood monitoring dashboard also raises considerations that extend beyond technical design: cross-jurisdictional digital systems of this kind typically require clear legal recognition and data-governance standards before they can function as authoritative, trusted records for inter-agency decision-making, a challenge similarly documented in analyses of other cross-border digital verification systems in Indonesia, where strong technical security has not been matched by consistent legal recognition across jurisdictions (Soares et al., 2025).

Although grounded in a single case, the coordination dynamics identified here are analytically generalisable to a wider class of mid-sized, multi-jurisdiction coastal cities in the global South where a shared hydrological system is bisected by administrative boundaries. The core mechanism—formal authority concentrated in a lead agency that nonetheless cannot compel cooperation across a jurisdictional boundary it does not control—recurs in the transboundary Ciliwung basin (Rahayu et al., 2024), in the fragmented risk-communication landscape of coastal Subang (Soejarwo et al., 2026) and, beyond Indonesia, in diagnostic accounts of integrated flood governance in Lagos and Accra (Okunola et al., 2026) and in Australia’s inter-jurisdictional flood-governance reforms (Nguyen et al., 2025). What travels from the Cirebon case is therefore not the specific institutional roster but a transferable diagnostic: where hazard exposure is shared but budgetary and regulatory authority is split, coordination gravitates toward informal channels and stalls at the administrative seam unless a binding cross-boundary mechanism is deliberately created. Comparable cities can use the barrier-and-enabler configuration reported here as an analytical template, adapting the specific instruments to their own statutory context (Abdillah et al., 2025; Meerow et al., 2024).

It is important to temper the common recommendation of a shared digital dashboard with the political-economy realities that routinely undermine such platforms. Cross-jurisdictional monitoring systems are typically financed and maintained by whichever agency hosts them, creating a collective-action problem in which neither the city nor the regency BPBD is willing to absorb the recurrent operating cost of a shared asset—precisely the budget-silo dynamic documented in Section 4.4. Where such systems are funded through short-cycle project grants rather than recurrent budget lines, they frequently lapse once external financing ends, mirroring the broader finding that Indonesia’s digital-governance frameworks exist on paper but suffer inconsistent institutional uptake and maintenance (Magfiroh et al., 2024). Sustaining such a platform therefore depends less on its technical design than on resolving who owns, funds, and is accountable for it—questions of disaster-risk financing and institutional incentives that must be settled through the binding city–regency mechanism proposed below, and that echo wider debates on the political economy of disaster-risk financing (Sharma, 2025).

5. Conclusion

This study examined how local government coordination is structured, practised, and constrained in flood mitigation policy in Cirebon, a dual river-and-tidal flood-prone city administratively divided between a city and a regency government. The findings show that coordination operates through three overlapping mechanisms—formal command-line coordination centred on BPBD, semi-formal multi-stakeholder forums, and informal digital communication—with informal channels carrying a disproportionate share of real-time coordination despite lower perceived accountability. Coordination effectiveness is most significantly constrained by the administrative split between Kota and Kabupaten Cirebon, compounded by budget silos, weak SOP enforcement, and limited real-time data sharing, while sustained leadership commitment and community-based early warning networks serve as key enabling factors.

Based on these findings, five policy recommendations are proposed: (1) establishing a binding joint coordination mechanism, such as a shared Memorandum of Understanding or joint flood management body, between Kota and Kabupaten Cirebon to address the administrative boundary problem directly; (2) formalising and adequately resourcing Forum PRB as an institutionalised coordination platform rather than a semi-formal supplementary body; (3) developing a shared, real-time flood-monitoring dashboard for both jurisdictions, but embedding it from the outset in a recurrent, jointly-owned budget line with a designated host agency and clear data-governance responsibilities rather than a one-off grant-funded build, so that its maintenance survives beyond the initial project cycle; (4) strengthening SOP enforcement mechanisms with clear accountability lines for informal coordination channels currently operating outside the formal command structure; and (5) securing the continuity of community-based early-warning networks by routing sustained support—training, equipment, modest stipends, and volunteer insurance—through village and kelurahan budget allocations and Forum PRB rather than direct agency control, so that institutional durability is achieved without eroding the community ownership and trust on which these networks depend. Future research should explore comparative coordination dynamics across other Indonesian dual-jurisdiction coastal cities, and examine the longitudinal effect of leadership turnover on coordination network stability. A formal social network analysis using sociometric data collected for that purpose would further allow the centrality, density, and tie-strength patterns characterised qualitatively in Section 4.2 to be measured and compared across jurisdictions.

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