

Beyond Emergency Response: Institutional Collective Action for Subdistrict Flood-Risk Governance - A Theory-Focused Narrative Review and Practice Translation

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Abstract. Flood-risk governance in remote subdistricts is not only an emergency-response problem; it is an institutional collective-action problem involving interdependent tasks, divided authority, unequal resources, and changing coordination requirements across disaster phases. This theory-focused narrative review reconstructs the Institutional Collective Action (ICA) Framework and translates it for a subdistrict-scale governance arena, using Sembakung Atulai in North Kalimantan, Indonesia, as a documented contextual anchor rather than an empirically evaluated case. Six Scopus search runs yielded 464 raw records; after deduplication and screening, 45 accessible full texts were assessed and 43 peer reviewed journal articles were included in a qualitative-interpretive synthesis. The review identifies ICA's core account of fragmented authority, collaboration risks, transaction costs, integration mechanisms, social embeddedness, and institutional feedback, while retaining boundaries concerning rationality, power, effectiveness, legitimacy, context, and temporal change. The synthesis produces a six-domain Theory-to-Practice Translation Framework: interdependence and actor architecture; differentiated collaboration-risk diagnosis; a fit-for-purpose integration-mechanism portfolio; relational capacity, commitment, and network resilience; phase-sensitive adaptation and institutional learning; and democratic anchorage and contextual legitimacy. Its original contribution is the integration of these established constructs into an actor-aware, phase-sensitive administrative sequence that distinguishes core ICA mechanisms from disaster-governance translation safeguards. The framework offers diagnostic questions and design options but requires legal-institutional and empirical validation before local application

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1. Introduction

Floods make the interdependence of public action unusually visible. Early warning, evacuation, health services, logistics, infrastructure protection, damage assessment, and recovery are performed by organizations that hold different mandates, resources, information, and decision rights. A response can therefore be operationally active yet institutionally fragmented: what one organization decides changes the costs and possibilities faced by others. Public administration scholarship needs a language that explains this problem without assuming that collaboration is automatically beneficial or that a single formal body will solve every coordination difficulty. Institutional Collective Action (ICA) provides such a language by connecting divided authority and interdependence to transaction costs, collaboration risks, and alternative integration mechanisms (Feiock, 2009; Feiock, 2013; Kim et al., 2022). The need for this distinction is acute in geographically remote and institutionally layered settings. Official statistics for Sembakung Atulai document flood occurrence in three villages during January-April 2024 and uneven village-level availability of early-warning and safety facilities (BPS Kabupaten Nunukan, 2025, Tables 4.4.1 and 4.4.3). Official disaster reports document

flooding, monitoring and coordination involving district, subdistrict, and village actors, and the transition from emergency response toward assessment, rehabilitation, and reconstruction (BPBD Nunukan, 2026a, 2026b). These sources establish exposure and reported multi-actor activity; they do not establish the quality, effectiveness, or completeness of existing governance. Sembakung Atulai is therefore used only as a documented translation context for theory-derived administrative questions. ICA scholarship has grown from metropolitan and interlocal governance into economic development, strategic planning, waste, environmental policy, climate action, public health emergencies, and disaster networks. Its expansion improves practical reach but creates a synthesis problem. Constructs are distributed across foundational and updated formulations; empirical studies use different risk measures and network concepts; and comparative work warns that administrative traditions, incentives, political contexts, and institutional legacies alter mechanism choice and performance (Zeemering, 2019; Tavares & Feiock, 2018; Casula, 2020; Andersen & Pierre, 2010). Emergency applications add a further complication: bonding, bridging, communication, and commitment can support collective capacity, but network structure or formal participation is not equivalent to effective performance (Andrew et al., 2016; Jung & Song, 2018; Jung & Song, 2015; Jung et al., 2019). This review addresses three questions. RQ1 asks: How did the ICA Framework originate and evolve, and what are its core constructs, mechanisms, relations, assumptions, levels, outcomes, and boundaries? RQ2 asks: How has ICA been applied, adapted, criticized, and bounded in Public Administration and adjacent disaster-risk settings? RQ3 asks: How can ICA be translated into a phase-sensitive and actor-aware framework for flood-risk governance at subdistrict scale? The contribution is not a new ICA theory. It is an original translation architecture that integrates actor-task-authority mapping, differentiated collaboration risks, mechanism portfolios, relational resilience, temporal learning, and democratic anchorage into six linked administrative decisions. The framework explicitly separates core ICA constructs from disaster-governance adaptations and preserves uncertainty about local fit and effectiveness.

Indonesian Legal-Institutional Context and Unit of Analysis

Indonesia's legal architecture assigns disaster management responsibilities to national and regional government across pre-disaster, emergency-response, and post-disaster phases (Republic of Indonesia, 2007, 2008). A kecamatan is an administrative territorial unit led by a camat, not an autonomous local government; its operational role depends on statutory coordinating functions and authority delegated by the regent (Republic of Indonesia, 2018a). Minimum service standards place core disaster services at district/city level (Republic of Indonesia, 2018b). In Nunukan, the relevant institutional setting includes the district disaster-management regulation, the BPBD organizational mandate, the 2025-2029 disaster-risk assessment, and the 2025-2029 regional disaster-management plan (Government of Nunukan Regency, 2014, 2021, 2025a, 2025b).

Accordingly, this review defines its unit of analysis as a networked action arena situated at subdistrict scale, not the kecamatan as a sovereign collective actor. The potentially relevant collective actors include BPBD Kabupaten Nunukan, the camat and subdistrict apparatus, sectoral district agencies, village governments, emergency and security organizations, community organizations, and other authorized service providers. The camat is treated as a possible administrative and coordinating node whose actual decision rights must be established from applicable mandates and delegation instruments. This definition prevents the geographical label 'subdistrict' from being mistaken for autonomous disaster-governance authority.

2. Research Method

Research Design and Rationale

The study used a theory-focused narrative review with qualitative-interpretive synthesis and practice translation. This design was selected because the objective was not to estimate a pooled effect, count concept frequency, or claim exhaustive systematic-review coverage. The objective was to reconstruct a focal framework across its development, examine applications and criticisms, and translate the resulting conceptual architecture into a practice-oriented framework. A documented search, deduplication, eligibility, full-text verification, extraction, and claim-evidence process was nevertheless used to make interpretive judgments auditable. No local field data were collected; Sembakung Atulai served only as a documented contextual anchor.

Literature Search and Corpus Construction

Six reproducible Scopus TITTLE-ABS-KEY searches were executed on 16 August 2026 (Asia/Jakarta). The searches separately targeted (1) origins and development, (2) criticisms and boundaries, (3) applications and adaptations, (4) Public Administration relevance, (5) direct disaster applications, and (6) contextual disaster-governance literature. Each query embedded filters for Article document type, Journal source type, and English language; all publication years were eligible, with no subject-area restriction and no restriction by publication stage. The runs yielded 119, 69, 113, 78, 28, and 57 exported records, respectively, or 464 export rows in total. Cross-run DOI, identifier, and title matching consolidated these rows into 153 unique title-and-abstract records, representing 311 duplicate occurrences across search streams. Forty-one unique records were excluded during title-and-abstract screening, leaving 112 reports for retrieval. Supplementary Table S1 reproduces the exact queries verbatim and reports execution identifiers, raw CSV filenames, counts, and the complete recoverable selection flow.

Eligibility and Source Verification

Eligible sources were peer-reviewed journal articles that substantively developed, applied, tested, criticized, or bounded ICA, or provided direct conceptual transfer value for Public Administration and disaster-risk governance. Sources were excluded when the document was not an article, ICA was only incidental, or the setting offered no usable conceptual or application evidence. Supplementary retrieval located 45 accessible full texts; 67 reports remained unavailable and therefore could not be assessed for full-text eligibility. Two book reviews were excluded during verification, producing a final corpus of 43 full-text journal articles. This high non-retrieval proportion creates availability bias and is treated as a limitation rather than as evidence of ineligibility. The available source file does not preserve the access route and decision record for each unavailable report; the supplement therefore reports only information that can be reconstructed without fabrication. The included corpus is registered in Supplementary Table S2. Fine-grained theory claims were grounded only in verified full texts. The label's 2004 origin was reported through the verified retrospective by Kim et al. rather than by treating an unavailable book as direct evidence (Kim et al., 2022).

Qualitative-Interpretive Synthesis

Synthesis proceeded in four linked passes. First, developmental articles were compared chronologically to identify theory identity, constructs, mechanisms, relations, assumptions, levels, outcomes, and boundaries. Second, every included article was mapped by country, sector, unit of analysis, theory role, constructs, method, finding, adaptation, limitation, and transferability. Third, criticism records retained contradictory and limiting evidence concerning rationality, context, power, legitimacy, network effectiveness, measurement, and time. Fourth, each proposed practice domain was required to trace a chain from a verified phenomenon element to an original ICA construct or mechanism, one or more full-text applications, an explicit interpretive transformation, a practice option, and a caution. Six was the smallest classification that kept actor architecture, risk diagnosis, mechanism design, relational capacity, temporal learning, and legitimacy distinct without treating every subconstruct as a separate domain. Supplementary Table S3 documents this domain-derivation logic and identifies phase sensitivity and democratic anchorage as translational safeguards rather than original ICA constructs.

Origins and Intellectual Context

ICA is rooted in collective-action, institutional-analysis, public-choice, and transaction-cost traditions, but its distinct object is institutional rather than purely individual action. The actors are usually governments or public-service organizations whose authorized decision makers choose whether and how to coordinate. The core problem arises when authority is partitioned while policy effects, services, resources, or risks cross the resulting boundaries. Early work connected cooperation to social capital and repeated interaction; the 2009 framework articulation classified regional governance tools and made transaction-cost barriers central; the 2013 statement consolidated the framework; and the 2022 update clarified context, actors, collaboration risks, mechanisms, and dynamics (Park & Feiock, 2006; Feiock, 2009; Feiock, 2013; Kim et al., 2022). The framework therefore differs from a generic call for collaboration. An ICA dilemma must identify both interdependence and a barrier to collectively preferable action. Horizontal dilemmas arise among organizations at the same governmental level; vertical dilemmas connect levels; functional dilemmas connect policy tasks or service chains. Economic-development joint ventures, public-safety agreements, unused-

pharmaceutical governance, and city-level climate coordination demonstrate how different forms of fragmentation activate different actors and transaction problems (Feiock et al., 2009; Andrew & Hawkins, 2013; Hubbard & Fowler, 2021; Zeng et al., 2026).

Core Constructs, Mechanisms, and Relations

ICA's explanatory sequence begins with context. Problem attributes, actor preferences, existing institutions, history of interaction, and political-cultural conditions shape the perceived benefits and risks of collective action. Fragmented authority makes relevant spillovers, scale inefficiencies, shared-resource problems, or incompatible decisions possible. Composite actors add an aggregation issue: an individual may attend a meeting without being authorized to commit the organization, and organizational preferences may conceal internal disagreement. Context is thus not background decoration; it specifies the situation in which collaboration choices occur (Feiock, 2013; Andersen & Pierre, 2010; Kim et al., 2022). Collaboration risk provides the framework's most useful diagnostic refinement. Coordination risk concerns uncertainty about task matching, information, and how actors' contributions combine. Division risk concerns disputed allocation of costs, benefits, resources, credit, or blame. Defection risk concerns the credibility of commitments and exposure to noncompliance or opportunism. These risks alter expected transaction costs and can interact with network structure in non-linear ways. Emergency-management evidence shows, for example, that vulnerability and resource dependence can motivate exchange while also heightening bargaining and commitment problems (Song, 2023; Song et al., 2020; Song et al., 2025; Kim et al., 2022).

Authorized decision makers are expected to weigh perceived benefits against production, bargaining, information, monitoring, enforcement, autonomy, and agency costs, but these judgments are bounded by information limits, political incentives, institutional history, and power asymmetries. They may select among integration mechanisms that vary in collective versus bilateral focus and in autonomy or authority. Informal communication, networks, contracts, multilateral agreements, lead organizations, delegated bodies, and imposed or mandated arrangements are not ordered on a universally superior ladder. Their fit depends on problem complexity, the number and heterogeneity of actors, the collaboration-risk profile, existing authority, path dependence, and feasible safeguards. Intermunicipal studies show that voluntary, contractual, and mandated forms have different contextual requirements and implementation risks (Tavares & Feiock, 2018; Agrawal & Gretzinger, 2025; Fernandes et al., 2020; Casula, 2020). Social embeddedness modifies these calculations. Repeated ties can build reputation, reciprocity, shared expectations, and access to information, thereby lowering some transaction costs. Bonding within cohesive clusters and bridging across structural divides can supply different advantages. Yet the same structures can exclude outsiders, concentrate influence, reproduce political homophily, or fail when bridge organizations withdraw. Political similarity can facilitate ties, while strong commitment and communication may matter more than formal network centrality alone (Song et al., 2018; Kim et al., 2017; Jung & Song, 2018; Jung & Song, 2015).

3. Result And Discussion

Assumptions, Boundaries, and Theoretical Evolution

The updated framework treats decision makers as boundedly rational and socially situated, not as perfect optimizers. Perceived risks and rewards are filtered through norms, political incentives, urgency, dependence, and institutional history. Evidence from China and metropolitan strategy shows that political advancement, symbolism, identity, and territorial considerations can supplement or override a narrow net-benefit calculation (Chen et al., 2016; Castillo, 2019; Andersen & Pierre, 2010). This is a boundary on prediction, not a reason to discard transaction-cost diagnosis. The framework also moved from relatively static mechanism choice toward feedback and institutional change. Collaboration alters relationships, capacities, expectations, and future costs; crises can produce temporary innovations or dissolve previously important ties. The effectiveness of an arrangement must therefore be distinguished from its existence, density, centrality, or formal adoption. Longitudinal disaster studies show that commitment, bridge durability, and post-event adaptation can change over time (Jung & Song, 2018; Wilson et al., 2020; Jung et al., 2019; Kim et al., 2022).

Applications, Criticisms, And Boundaries

Applications Across Public and Disaster-Governance Contexts

ICA has been applied widely within local and regional governance. Economic-development partnerships connect interlocal agreement formation to political similarity, embeddedness, and strategic planning (Chen et al., 2016; Feiock et al., 2009; Percoco, 2016; Park & Feiock, 2006). Comparative intermunicipal research in Europe, Brazil, Canada, and Chile shows that legal authority, administrative tradition, mandate design, fiscal capacity, and network configuration affect whether cooperation forms and how it operates (Tavares & Feiock, 2018; Agrawal & Gretzinger, 2025; Fernandes et al., 2020; Retamal-Soto et al., 2023; Do Nascimento et al., 2021). These applications support ICA's portability as a diagnostic vocabulary while resisting a single institutional prescription. Environmental and climate applications further expose cross-boundary interdependence. Regional sustainability, urban climate coordination, sea-level-rise adaptation, cultural-heritage regeneration, metropolitan resilience, and wildfire governance all require alignment across sectors, scales, or jurisdictions. They emphasize problem complexity, authority, local capacity, participation, and social-ecological context (Yi et al., 2018; Zeng et al., 2026; Yusuf et al., 2022; Piperno et al., 2023; Thuraniira & Frey, 2023; Bixler et al., 2023). For flood-risk governance, the implication is not that these institutional forms should be copied, but that cross-boundary risk should be matched with an explicit actor, authority, and transaction-cost analysis. Emergency and disaster studies offer the closest transfer evidence. Public-health and emergency networks link bonding, bridging, communication, leadership, grassroots participation, and resource exchange to preparedness or perceived collaboration outcomes (Kim et al., 2017; Soujaa et al., 2021; Andrew et al., 2015). Flood studies show that organizational resilience can depend on the mix and durability of ties rather than on dense connectivity alone, and that regional flood-policy collaboration can organize conflict as well as consensus (Andrew et al., 2016; Bauroth, 2018; Jung, 2017). Disaster networks may contain isolated organizations and broken bridges; strong commitment can matter beyond formal plans; and vulnerability shapes both the need for resource sharing and the risks attached to it (Jung & Song, 2018; Song et al., 2025; Jung et al., 2019). Applications outside classic intergovernmental arrangements broaden the actor set. Nonprofit self-organization raises questions about autonomy, resource dependence, and agreement structure; grassroots organizations can add preparedness capacity and local knowledge; and community learning can sustain collective action in hazard-prone areas (Jang et al., 2016; Andrew et al., 2015; Azad et al., 2022). These studies justify including community and nonprofit actors in a subdistrict actor architecture, but they do not erase differences in legal authority or public accountability.

Criticisms, Contradictory Evidence, and Limitations

The first major boundary is geographic and institutional. Much ICA research remains concentrated in United States local governance, where legal, fiscal, and political conditions differ from European, Asian, Latin American, or Indonesian settings. Comparative studies show that administrative traditions, intergovernmental incentives, metropolitan legacies, and central-government authority alter the feasibility and meaning of self-organization (Zeemering, 2019; Thuraniira & Frey, 2023; Tavares & Feiock, 2018; Casula, 2020; Casula & Pazos-Vidal, 2021). Transfer to Sembakung Atulai therefore requires legal and institutional fit assessment rather than terminological substitution. A second boundary concerns power and distribution. Transaction costs can be described as if all parties possess comparable voice and exit options, but collaboration distributes burdens, benefits, recognition, autonomy, and exposure unevenly. Political incentives may produce cooperation for reasons other than joint welfare, while dependency can compel weaker actors to participate. Mandated arrangements may secure formal compliance without providing implementation capacity or resolving fiscal conflict (Chen et al., 2016; Agrawal & Gretzinger, 2025; Song et al., 2025). A collaboration-risk register must therefore keep division and power visible rather than collapsing them into one efficiency score.

A third boundary concerns democratic anchorage. Interlocal and interorganizational arrangements can move important decisions away from ordinary electoral, budgetary, or administrative lines of accountability. Agreement formation may be efficient but insufficiently transparent, representative, responsive, or contestable (Zeemering, 2012; Zeemering, 2019). This problem is especially relevant when emergency urgency encourages delegation or informal coordination. Legitimacy safeguards should therefore accompany, not follow, mechanism choice. A fourth boundary concerns measurement and causal inference. Network

centrality, self-reported ties, perceived collaboration effectiveness, agreement counts, and organizational resilience capture different phenomena. Bonding and bridging findings vary by context and outcome; more ties can increase information access while also multiplying coordination costs or producing redundancy. An arrangement's presence cannot establish its effectiveness, and cross-sectional associations cannot identify adaptation over time (Kim et al., 2017; Song, 2023; Jung & Song, 2015; Song et al., 2020; Jung, 2017). The present framework accordingly treats practice proposals as testable options, not validated interventions.

Theory-To-Practice Translation Framework

The synthesis translates ICA into six connected domains. The first five form a diagnostic-and-design cycle, while the sixth is a cross-cutting safeguard. Each domain preserves an identifiable ICA construct or mechanism, incorporates application and criticism evidence, and specifies a bounded practice option. The sequence is not a rigid protocol. Administrators can enter at the domain most relevant to a current decision, but mechanism selection should not precede a credible diagnosis of interdependence, actors, and collaboration risk.

Table 1. Six-domain ICA Theory-to-Practice Translation Framework.

Domain	Diagnostic Focus	Practice Option	Boundary / Caution
1. Interdependence and Actor Architecture	Who depends on whom, for which task and phase, under what authority?	Actor-task-authority map cross-checked against national law, district mandates, BPBD functions, and valid delegation instruments.	A subdistrict-scale arena does not make the kecamatan an autonomous disaster authority; roles require legal and empirical validation.
2. Differentiated Collaboration-Risk Diagnosis	Is the barrier coordination, division, defection, or a combination?	Maintain an evidence-based risk register by actor relationship and phase.	Perceptions are not failure measures; keep distribution and power explicit.
3. Fit-for-Purpose Mechanism Portfolio	Which mix of autonomy, authority, complexity, and cost fits the diagnosed risk?	Compare and layer liaison, protocols, agreements, lead agencies, delegated bodies, and mandates.	More authority is not inherently better; mandates can relocate dilemmas.
4. Relational Capacity, Commitment, and Network Resilience	Are ties credible, durable, inclusive, communicative, and redundant?	Use liaison roles, joint exercises, reciprocal commitments, redundant communication, and network checks.	Density and bridging are not universal benefits; homophily and turnover can weaken resilience.
5. Phase-Sensitive Adaptation and Institutional Learning	How should arrangements change across mitigation, preparedness, response, and recovery?	Define transition triggers, decision rights, after-action review, and controlled revision.	Learning is not automatic; meetings and plans do not demonstrate adaptation.
6. Democratic Anchorage and Contextual Legitimacy	Who authorizes, participates, benefits, reports, contests, and reviews?	Specify representation, transparency, community input, complaints, conflict resolution, and legitimacy checks.	Do not assume a local deficit; imported forms may misfit Indonesian institutions.

Domain 1: Interdependence and Actor Architecture

The first domain asks whether an ICA problem actually exists. A phase-specific actor-task-authority map should identify which organizations and communities are interdependent, which resources and information they control, who can authorize commitments, and where a decision crosses an organizational, governmental-level, or functional boundary. This combines ICA's dilemma types, context, and composite-actor logic with evidence that emergency preparedness can depend on grassroots as well as governmental actors (Feiock, 2009; Zeng et al., 2026; Hubbard & Fowler, 2021; Feiock, 2013; Kim et al., 2022; Andrew et al., 2015). For Sembakung Atulai, any future map should distinguish district authority from subdistrict coordination and cross-check proposed roles against national law, Nunukan's disaster plan, BPBD mandates, and any valid delegation instrument. It would be a proposition-generating instrument; actor roles and gaps require documentary and local empirical validation.

Domain 2: Differentiated Collaboration-Risk Diagnosis

The second domain replaces a generic statement that coordination is difficult with three questions: Are tasks and information hard to match? Are burdens, benefits, resources, or recognition contested? Are commitments credible and monitorable? A register should record the actor relationship, disaster phase, evidence, risk owner, and candidate safeguards. Flood-policy conflict and emergency-network studies show why this separation matters: vulnerability or shared risk can stimulate collaboration while simultaneously generating coalitions, dependency, and bargaining exposure (Feiock et al., 2009; Song, 2023; Bauroth, 2018; Song et al., 2025; Kim et al., 2022). Scores should not conceal asymmetry; qualitative explanation is required.

Domain 3: Fit-for-Purpose Integration Mechanism Portfolio

The third domain compares mechanism options against the diagnosed risks, actor complexity, available authority, implementation capability, and transaction cost. Informal liaison and information protocols may be sufficient for low-conflict coordination; bilateral or multilateral agreements can clarify reciprocal commitments; lead-agency or delegated arrangements can concentrate operational responsibility; and mandates may be necessary when voluntary agreement is infeasible. Evidence across public safety, intermunicipal cooperation, public-health coordination, environmental governance, and regional adaptation supports a portfolio rather than a one-mechanism approach (Andrew & Hawkins, 2013; Tavares & Feiock, 2018; Agrawal & Gretzinger, 2025; Soujaa et al., 2021; Yi et al., 2018; Yusuf et al., 2022; Kim et al., 2022). Layering is often more realistic than replacement, but each additional layer adds reporting and agency costs.

Domain 4: Relational Capacity, Commitment, and Network Resilience

The fourth domain treats relationships as institutional capacity that must be maintained and stress-tested. Liaison roles, joint exercises, reciprocal commitments, cross-boundary contacts, redundant communication routes, and periodic network checks can reduce reliance on a single bridge or formal meeting. Evidence supports attention to bonding, bridging, political similarity, communication, embeddedness, and commitment, but also shows that bridges can dissolve and dense ties can exclude or overload actors (Song et al., 2018; Kim et al., 2017; Park & Feiock, 2006; Andrew et al., 2016; Jung & Song, 2018; Jung & Song, 2015; Soujaa et al., 2021; Song et al., 2020; Jung, 2017; Jung et al., 2019; Andrew et al., 2015). Network metrics should be combined with evidence about actual task performance and inclusion.

Domain 5: Phase-Sensitive Adaptation and Institutional Learning

The fifth domain translates ICA feedback into a disaster-phase cycle. Mitigation, preparedness, response, early recovery, and longer-term rehabilitation may require different actors, speed, authority, and safeguards. Administrators should define transition triggers and decision rights, conduct after-action reviews, record resource and coordination problems, and revise arrangements before the next cycle. Crisis innovation, multi-level response, regional adaptation, and community learning research shows that arrangements can change during and after events, but that learning requires institutional follow-through (Jung & Song, 2018; Wilson et al., 2020; Jung et al., 2019; Casula & Pazos-Vidal, 2021; Yusuf et al., 2022; Kim et al., 2022; Azad et al., 2022).

Domain 6: Democratic Anchorage and Contextual Legitimacy

The sixth domain surrounds the entire cycle with Public Administration safeguards. For every mechanism, administrators should ask who authorizes representatives, whose knowledge is included, how decisions and resource allocations are reported, how disputes are reviewed, and how community input can influence revision. Political incentives, administrative traditions, interlocal accountability, mandate implementation, and community learning all show that efficient coordination is not identical to legitimate governance (Chen et al., 2016; Zeemering, 2019; Zeemering, 2012; Thuraniira & Frey, 2023; Agrawal & Gretzinger, 2025; Fernandes et al., 2020; Casula, 2020; Andersen & Pierre, 2010; Casula & Pazos-Vidal, 2021; Kim et al., 2022; Azad et al., 2022). The domain does not presume an accountability deficit in Sembakung Atulai; it specifies what future empirical assessment should examine.

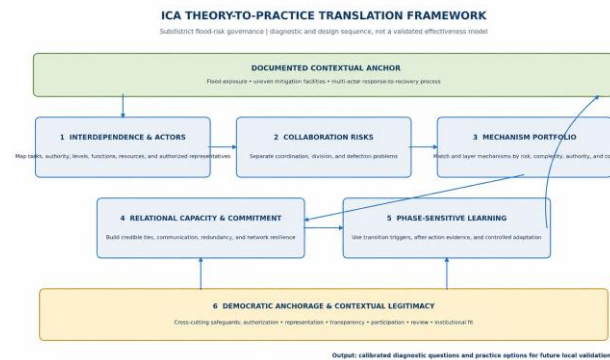


Figure 1. Phase-sensitive and actor-aware ICA Theory-to-Practice Translation Framework.

Note. The first five domains form a diagnostic-and-design cycle. Democratic anchorage and contextual legitimacy operate as a cross-cutting safeguard.

Discussion

The synthesis changes the administrative question from 'How can agencies collaborate more?' to 'What interdependence and risk justify which combination of arrangements, for which phase, under what authority and legitimacy conditions?' Core ICA constructs provide the diagnosis of interdependence, collaboration risks, transaction costs, mechanism choice, embeddedness, and feedback. Disaster phases, structured learning, and democratic anchorage are explicit translation safeguards used to make that diagnosis administratively usable; they are not presented as newly discovered ICA constructs. This distinction matters because collaboration consumes resources and can create new agency, accountability, and distributional problems. For flood-risk governance at subdistrict scale, the six domains create a sequence that connects routine administration with emergency operations. Actor mapping can reveal where response and recovery tasks depend on the same information or resource, while legal mapping identifies which organization may decide, coordinate, fund, or commit resources. Risk diagnosis can distinguish an information problem from a burden-sharing or commitment problem. Portfolio analysis can then compare informal, contractual, delegated, and mandated options. Relational capacity and learning address whether communication routes survive stress, commitments persist, and arrangements change after experience. Legitimacy safeguards connect speed and integration to authorization, transparency, community voice, and review. The framework also clarifies what should be measured in future research. A first empirical stage could validate the actor–task–authority map through document review and interviews. A second could assess collaboration risks by actor pair and disaster phase, keeping coordination, division, and defection distinct. A third could compare actual mechanisms with the predicted risk–complexity–authority fit. Network data could examine tie redundancy and turnover, while process tracing could test phase transitions and learning. Accountability analysis could examine authorization, reporting, representation, complaint pathways, and perceived legitimacy. Outcomes should include both operational and democratic dimensions rather than agreement counts alone.

Several propositions follow for empirical examination without being treated as established local facts. First, arrangements should fit better when actor and task interdependencies are specified by phase. Second, distinguishing collaboration-risk types should yield more targeted safeguards than a single coordination score. Third, layered portfolios may be more robust than reliance on one mechanism, provided that added agency and reporting costs remain manageable. Fourth, redundant communication and credible commitment may matter more under stress than formal participation alone. Fifth, institutional learning should depend on explicit transition triggers and authority to revise arrangements. Sixth, perceived legitimacy should condition the durability of collaborative arrangements. Each proposition requires local data and comparison. The conceptual and translational contribution is therefore bounded but substantive. The review integrates evidence usually separated across metropolitan governance, intermunicipal cooperation, emergency networks, environmental policy, climate adaptation, and accountability. Its originality lies in organizing that evidence into six linked administrative decisions, explicitly distinguishing core ICA mechanisms from disaster-governance translation safeguards, and connecting every design option to an authority, legitimacy, and validation requirement. The result is not a renamed theory but a traceable bridge from theory anatomy to researchable and practicable questions. The review has five principal limitations. First, the search used Scopus and English-language

journal articles, which may underrepresent Indonesian and other non-English scholarship, books, legal materials, and practitioner knowledge. Second, 67 of 112 sought reports were unavailable, so their full-text eligibility could not be determined; this substantial non-retrieval creates availability bias. Third, although the exact Scopus queries, execution metadata, export counts, and raw CSV lineage are preserved, the supplied files do not retain report-level retrieval routes or individual reasons for the 41 title-and-abstract exclusions, limiting reconstruction of the downstream audit trail. Fourth, the corpus is heterogeneous in setting, construct measurement, method, and outcome, and the qualitative synthesis does not estimate causal effects. Fifth, Sembakung Atulai is a documented translation context: official sources establish exposure, uneven mitigation facilities, and reported multi-actor activities, but the study collected no interviews, observations, network data, or implementation outcomes. The framework and its propositions therefore require empirical and legal-institutional validation.

4. Conclusion

Flood-risk governance extends beyond emergency response because the relevant collective-action problems begin before an event and continue through recovery and institutional revision. ICA explains how divided authority, interdependence, collaboration risks, transaction costs, social embeddedness, and mechanism choice shape this terrain. The literature also demonstrates that collaboration can be politically conditioned, unevenly distributed, weakly anchored, temporarily effective, or mismeasured. The proposed six-domain framework translates those insights into an actor-aware and phase-sensitive sequence: map interdependencies and authorized actors; diagnose coordination, division, and defection risks; compare and layer integration mechanisms; build relational capacity and credible commitment; adapt arrangements through disaster phases and institutional learning; and anchor every step in democratic and contextual legitimacy. For Sembakung Atulai, this is a structured agenda for validation and design, not an evaluation of existing governance. Its practical value will depend on future empirical work that tests actor architecture, risk perceptions, mechanism performance, distributional consequences, learning, and legitimacy in the local institutional setting.

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