



Coordinating Multi-Level Environmental Governance in Global South: A Communication Architecture Perspective

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Abstract

Environmental governance requires sustained coordination across multiple institutional levels, yet the communicative processes that enable such coordination remain underexplored. This study examines how communication organises coordination, authority, and institutional alignment within a multi-level environmental governance system in Banyuwangi Regency, East Java, Indonesia. Using a qualitative descriptive approach, data were collected through semi-structured interviews with 60 institutional actors across national, provincial, district, and local governance levels, complemented by policy documents, institutional reports, coordination records, and public communication materials. The findings identify three interrelated dynamics: communicative translation of policy across governance levels, negotiated authority and legitimacy, and the interaction between formal coordination mechanisms and informal communication practices. These dynamics extend existing perspectives on governance coordination by showing that coordination is produced through the continuous translation of policy meaning rather than linear transmission, that authority becomes operationally effective through communicative negotiation and recognition rather than formal mandates alone, and that institutional alignment is sustained through the interaction of formal and informal communication mechanisms. Theoretically, this study conceptualises communication architecture as an analytical framework for explaining how these patterned communicative processes sustain institutional alignment and enable adaptive coordination in fragmented environmental governance systems.

Keywords: Communication Architecture; Multi-Level Governance; Environmental Governance; Institutional Alignment; organisational Communication

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INTRODUCTION

Environmental governance has increasingly evolved into complex, multilevel arrangements involving actors operating across local, regional, and national domains. Contemporary sustainability challenges, including climate adaptation, biodiversity conservation, and resource management, require coordination among diverse institutional actors beyond the capacity of centralised authority (Ostrom 2010; Anton 2015). Governance systems have therefore shifted towards networked configurations that bring together public agencies, private organisations, civil society, and community groups across institutional boundaries (Jordan and Lenschow, 2010). This transformation reflects broader changes in public management, where coordination replaces hierarchical control and collaborative mechanisms substitute command-and-control regulation (Emerson et al. 2012). Networked governance perspectives further emphasise that policy outcomes increasingly emerge from interactions among interdependent actors rather than from a centralised authority (Klijn and Koppenjan, 2015; Sørensen and Torfing, 2005). Therefore, governing in such contexts depends on the capacity to align dispersed actors, making coordination a central challenge in contemporary public management.

However, persistent coordination failures continue to undermine environmental governance outcomes. Fragmented authority, overlapping mandates, and competing sectoral priorities frequently weaken policy effectiveness (Young 2017). Vertical misalignments between national policy frameworks and local implementation generate gaps between regulatory intent and operational practice (Cash et al. 2006), whereas horizontal tensions among sectoral actors produce conflicting priorities within governance arenas (Folke et al. 2005). These challenges are particularly evident in policy domains that require cross-boundary coordination, such as climate adaptation and biodiversity governance (Biermann and Pattberg, 2008). Even when institutional arrangements appear formally aligned, governance processes often reveal breakdowns in coordination across levels. Explaining how coordination is sustained under such conditions remains a central concern in public management and governance research.

Existing scholarship has largely approached coordination challenges through the lenses of institutional design, regulatory frameworks, political economy, and administrative capacity (Biermann and Pattberg, 2008; Young, 2017). Studies on collaborative and networked governance have further examined decentralisation, stakeholder participation, and inter-organisational arrangements as mechanisms for managing institutional fragmentation (Ansell and Gash, 2008), while more recent work has emphasised interaction, negotiation, and interdependence within governance networks (Ansell et al., 2020; Klijn and Koppenjan, 2015). Although these perspectives provide important insights, they leave insufficiently explained how coordination is continuously produced and sustained through communication across multiple governance levels. This gap matters because formal institutional arrangements and actor interaction alone do not explain how policy meanings are translated, authority is negotiated, and institutional alignment is maintained when actors operate across different administrative levels and sectoral boundaries. Communication is still frequently treated as a facilitating instrument for participation, information exchange, or transparency rather than as a structuring condition of governance coordination (Cornelissen, 2007). Addressing this limitation, this study conceptualises communication architecture as an analytical framework for examining the patterned communicative processes through which policy translation, authority negotiation, and formal-informal coordination organise and sustain institutional alignment in multi-level environmental governance.



This analytical limitation is reinforced by the tendency to focus on relational interactions rather than the systemic organisation of communication. Governance research acknowledges the importance of interaction among actors but rarely examines how communication flows are patterned across institutional layers to sustain alignment. Interorganisational communication scholarship has advanced our understanding of collaboration, boundary spanning, and network coordination (Provan and Kenis, 2008; Putnam and Krone, 2007); however, it primarily concentrates on interactional processes rather than the structural configuration of communication across governance systems (Schoeneborn et al., 2019; Vásquez and Schoeneborn, 2018). Questions concerning how communication organises authority, enables coordination, and supports alignment across multiple governance levels remain insufficiently explored.

These limitations become more pronounced in Global South governance contexts, where environmental governance frequently operates under conditions of institutional hybridity, administrative fragmentation, and socio-cultural diversity (Bierschenk and Olivier de Sardan, 2014; Cleaver, 2012). Formal governance structures often coexist with informal coordination practices and relational networks that shape decision-making processes. Such conditions challenge assumptions derived from more consolidated bureaucratic settings and draw attention to how coordination is achieved in complex and adaptive environments. Despite this, empirical research examining the structural dynamics of governance coordination in these contexts remains limited (Poteete et al. 2010), constraining theoretical development within governance research.

These characteristics are particularly relevant to the Indonesian context, where environmental governance is organised across decentralised administrative levels and involves actors with uneven institutional capacities, overlapping responsibilities, and different sources of authority and legitimacy. In Banyuwangi, governance processes connect national policy frameworks and institutional expectations with provincial coordination, district-level implementation, and locally embedded arrangements involving community-based actors, customary institutions, professional associations, and other stakeholders whose authority and legitimacy may derive from different institutional, organisational, and sociocultural foundations. Formal administrative procedures also coexist with informal relational and digitally mediated communication practices. This configuration makes the case analytically significant for examining governance in the Global South because coordination must be sustained across institutional levels that differ in authority, resources, implementation capacity, and access to communication networks. Rather than treating the Global South merely as a geographical category, this study therefore examines how communication architecture operates under conditions of institutional hybridity, uneven administrative capacity, and interdependence between formal and informal governance arrangements.

A different analytical perspective becomes necessary when coordination is understood not only as an institutional outcome but also as a process shaped by how communicative relationships are organised across governance levels. In this study, communication architecture is defined as an analytical framework that refers to the patterned configuration of communicative flows, policy translation practices, authority negotiations, feedback mechanisms, and formal–informal interactions through which actors coordinate action and sustain institutional alignment across organisational and governance boundaries. This perspective shifts analytical attention from isolated interactions to the structured communicative processes that enable or constrain alignment among actors operating at different institutional levels and across sectors. Through this lens, coordination

can be examined as an ongoing accomplishment that is sustained, adjusted, or disrupted through the organisation of communication rather than as an automatic outcome of formal institutional arrangements. Accordingly, this study examines how communication architecture organises coordination, shapes the negotiation of authority, and supports institutional alignment within a multilevel environmental governance system in Indonesia. By doing so, the study advances a communication-centred explanation of coordination in institutionally fragmented governance contexts in the Global South.

METHODS

This study examines how communication organises coordination within a multilevel environmental governance system. The unit of analysis is the relational configuration among actors operating across institutional levels and sectoral boundaries, rather than individual organisations. The method was designed to identify recurring communication patterns through which policy meaning, authority, and institutional alignment are negotiated.

Type of Research

This study employs a qualitative descriptive approach to examine how communication organises coordination within a multilevel environmental governance system. A qualitative descriptive design is particularly suitable for this study because the research seeks to understand how institutional actors interpret, negotiate, and enact coordination in their everyday governance practices rather than to test predetermined causal relationships or generate statistical generalisations. This approach enables a systematic yet context-sensitive examination of communication practices, including policy translation, authority negotiation, and formal and informal coordination across governance levels (Creswell and Poth, 2018; Lindlof and Taylor, 2019). It is also appropriate for capturing variations in how actors occupying different institutional and sectoral positions make sense of policy directions, implementation constraints, and coordination processes. Accordingly, the design allows the study to identify recurring communicative patterns while retaining the contextual conditions in which those patterns emerge, thereby providing an in-depth understanding of how communication supports, constrains, and sustains institutional alignment within multilevel environmental governance.

Research Setting and Period

The study was conducted within the multilevel environmental governance system centred on Banyuwangi Regency, East Java, Indonesia. Empirically, the study focuses on governance processes associated with the management and revalidation of the Ijen UNESCO Global Geopark, where institutional standards and recommendations must be coordinated across national, provincial, district, and local levels. This governance domain involves the translation of broader policy and institutional expectations into locally implementable arrangements across governmental, community, tourism, and other stakeholder contexts. Data collection was carried out from November 2025 to January 2026. Banyuwangi Regency was selected not merely as a geographically bounded case but as an analytically distinctive setting in which environmental governance requires coordination across multiple administrative levels and institutional sectors. The governance system connects national institutional expectations with provincial mediation, district-level



implementation, and locally embedded community and stakeholder arrangements. These actors operate with different mandates, capacities, resources, and degrees of access to coordination processes. At the same time, formal institutional procedures coexist with informal interpersonal and digitally mediated communication practices that frequently support day-to-day coordination. This combination of vertical administrative complexity, cross-sectoral interdependence, uneven institutional capacity, and formal–informal governance interaction makes Banyuwangi a particularly relevant setting for examining how communication architecture enables, constrains, and sustains coordination within a Global South governance context.

Research Focus

The research focus was defined to limit the scope of the study and ensure that the data collected remained relevant to the research objectives (Creswell and Poth, 2018). This study focuses on how communication organises coordination within a multilevel environmental governance system, where authority and responsibilities are distributed across institutional levels and organisational boundaries (Cash et al., 2006; Klijn and Koppenjan, 2015). Specifically, the analysis examines: (1) the translation and adaptation of policy messages across governance levels; (2) the communicative negotiation of authority and legitimacy among institutional actors; and (3) the interaction between formal coordination mechanisms and informal communication practices (Emerson et al., 2012; Provan and Kenis, 2008). These dimensions are analysed to explain how communication architecture enables, constrains, and sustains institutional alignment across levels and sectors (Schoeneborn et al., 2019; Vásquez and Schoeneborn, 2018).

Data Sources and Collection Techniques

Data were collected through semi-structured in-depth interviews and document analysis. Primary data were obtained from interviews with 60 participants purposively selected to represent diverse actor categories, governance levels, and institutional sectors within the environmental governance system. Participants included actors from governmental institutions, professional and trade associations, business organisations, academic institutions, customary institutions, local communities, non-governmental organisations, and other relevant stakeholder groups operating across national, provincial, district, and local governance levels. The distribution of participants according to actor category, governance level, institutional sector, and number of participants is presented in Table 1. Secondary data consisted of policy frameworks, institutional reports, coordination documents, and public communication materials relevant to the research focus. The combination of interview and documentary data enabled the researchers to compare actors' experiences and interpretations with formal governance arrangements and documented coordination practices, thereby supporting a more comprehensive examination of communication processes across institutional levels and sectors.

Table 1. Participant Profile

Actor Category	Governance Level	Institutional Sector	Number of participants
National government actors	National	Government/Public sector	4
Provincial government actors	Provincial	Government/Public sector	6

District government actors	District	Government/Public sector	18
Local governance and community actors	Local	Government/Community	10
Professional and trade associations	District/Local	Professional/Association	5
Business organisations	District/Local	Private Sector	5
Academic institutions	Provincial/District	Academic	4
Non-governmental and civil society organisations	Multiple Levels	Civil society	4
Customary institutions and local community representatives	Local	Community/Customary	4
Total			60

Interview

Semi-structured in-depth interviews were conducted either in person or through secure digital platforms. The interviews explored participants' experiences of policy communication, interorganisational coordination, authority negotiation, institutional alignment, and formal and informal communication practices. With participants' consent, the interviews were audio-recorded and transcribed verbatim.

Documentation

Documentation involved collecting and examining policy frameworks, institutional reports, coordination documents, and public communication materials. These documents were used to provide contextual information and to compare formal institutional arrangements with participants' accounts of coordination and communication practices.

Informant Selection Techniques

Participants were selected using purposive sampling, which is appropriate when qualitative researchers seek information-rich participants with direct knowledge and experience of the phenomenon under investigation (Creswell and Poth, 2018; Lindlof and Taylor, 2019; Patton, 2015). The selection strategy was designed to capture variations in institutional positions, governance levels, and sectoral roles within the environmental governance system.

Participants were eligible for inclusion when they met one or more of the following criteria: (1) holding a formal, managerial, operational, or representative role in the formulation, coordination, implementation, or evaluation of environmental governance programmes; (2) having direct experience of communication and coordination across organisational, sectoral, or governance boundaries; (3) possessing knowledge of how policy directions, institutional authority, and coordination practices were interpreted and enacted within their respective institutional contexts; and (4) being willing to participate voluntarily and provide informed consent.

The selection process sought representation from actors operating at different governance levels, including national, provincial, district, and local levels, as well as from governmental, community-based, private, academic, professional, and civil society organisations. This multilevel and cross-sectoral composition enabled the study to examine both vertical communication across governance levels and horizontal coordination across organisations and sectors. It also allowed the researchers to compare how actors occupying different institutional positions understood policy directives, authority relations, and coordination practices.

A total of 60 participants were selected from national, provincial, district, and local governance contexts. They represented government institutions, professional and trade associations, business organisations, academic institutions, customary institutions, local communities, non-governmental organisations, and other actors involved in environmental governance. The distribution of participants across governance levels and institutional sectors is presented in Table 1.

Information sufficiency was assessed throughout the data collection and analysis process by comparing accounts across governance levels, institutional sectors, and actor categories. As interviews progressed, recurring patterns concerning policy translation, authority negotiation, and formal-informal coordination were identified across different participant groups. Data collection was considered sufficient when additional interviews primarily reinforced existing patterns and variations rather than introducing substantively new dimensions relevant to the research focus. The inclusion of participants from multiple governance levels and sectors further ensured that the analysis captured diverse institutional perspectives and contrasting experiences within the governance system.

Research Instruments

The researchers served as the primary instruments in collecting and interpreting the qualitative data (Creswell and Poth 2018; Lindlof and Taylor 2019). Data collection was guided by a semi-structured interview protocol containing open-ended questions on cross-level coordination, policy translation, authority and legitimacy, and formal and informal communication practices. Flexible follow-up questions were used to explore participants' responses in greater depth (Kvale and Brinkmann 2015). Supporting instruments included audio-recording devices, interview transcripts, and a system for organising documentary materials according to their institutional source and relevance to the research focus.

Validity of Findings

The trustworthiness of the findings was assessed through credibility, transferability, dependability, and confirmability (Lincoln and Guba 1985). Credibility was strengthened by comparing accounts from actors across governance levels and sectors and by triangulating interview data with policy frameworks, institutional reports, coordination records, and public communication materials. In practice, participants' accounts of policy expectations, institutional responsibilities, and coordination practices were compared with documented policy provisions, formal coordination arrangements, and publicly communicated institutional activities. Convergences between interview and documentary evidence were used to strengthen the interpretation of recurring patterns, while inconsistencies were examined to identify differences between formal institutional arrangements and coordination as experienced in practice. Divergent and contradictory accounts were retained

and analysed as evidence of variation in how policy meaning, authority, and coordination were interpreted across governance levels and institutional positions, rather than being excluded from the analysis (Tracy 2010). Transferability was supported by describing the governance context, actor configuration, and communication processes examined in the study. Dependability was maintained through iterative coding, comparison, and refinement of categories across interview transcripts and documents (Saldaña 2021). Confirmability was strengthened by linking the interpretations to interview excerpts and documentary evidence and by considering contradictory findings that could challenge the researchers' initial assumptions (Creswell and Poth 2018).

Data analysis

The analysis followed an inductive qualitative approach aimed at identifying recurring patterns in communication and coordination across governance levels. The coding process was conducted iteratively in several stages. First, the interview transcripts and documentary materials were read repeatedly to gain familiarity with the data and identify relevant meaning units. Initial coding was then conducted to capture participants' descriptions of communication practices, coordination processes, authority relations, and cross-level interactions. Examples of initial codes included "interpreting national policy," "adapting programmes to local capacity," "negotiating feasible implementation," "clarifying institutional authority," "using informal channels for rapid coordination," and "unequal access to informal networks." In the subsequent stage, related codes were compared and clustered into broader categories through focused and pattern coding. These categories were progressively refined into three overarching themes: communicative translation across levels, negotiated authority and legitimacy, and formal–informal coordination dynamics. The analysis focused on patterns that extended across individual accounts and governance levels, while also retaining divergent or contradictory accounts that revealed variations in coordination practices.

Primary coding was conducted by the first author, while the emerging codes, categories, and thematic interpretations were reviewed and discussed with the co-authors. Interpretations were validated through iterative comparison between coded interview data and documentary sources, comparison of accounts across different governance levels and institutional sectors, and repeated examination of the original data to ensure that the themes remained grounded in participants' accounts. Divergent and contradictory evidence was retained and examined rather than excluded, allowing the analysis to identify both recurring patterns and variations within the governance system. This iterative analytical process strengthened the credibility of the interpretation and provided the basis for conceptualising communication architecture as a patterned configuration of communicative processes that shapes coordination and institutional alignment across governance levels.

Ethical Considerations

Ethical approval for this study was granted by the Human Research Ethics Committee of IPB University (No. 1947/IT3.KEPMSM-IPB/SK/2025), in accordance with standards for studies involving human participants. Participants were informed about the purpose of the research, the voluntary nature of their involvement, and their right to withdraw at any time. Informed consent was obtained prior to data collection. Confidentiality was maintained through anonymisation and the use of broad role-based descriptors that did not reveal participants' names, specific positions, or institutional affiliations.



RESULTS AND DISCUSSION

Communicative Translation Across Levels

The empirical findings indicate that coordination across governance levels does not operate through the straightforward transmission of policy directives. Instead, policy meanings are progressively interpreted, reformulated, and adapted as they move from national policy and institutional frameworks to provincial, district, and local implementation contexts. At the national level, documentary evidence indicates that governance direction is articulated through institutional standards, recommendations, and reporting expectations. For example, guidance presented by the national geological authority emphasised that recommendations associated with UNESCO Global Geopark status must be implemented and periodically reported, with continuing communication required when particular recommendations remain incomplete. These institutional expectations establish a broad framework for action but still require interpretation and coordination at subnational levels. At the provincial level, this process of interpretation becomes more explicit. A provincial government representative explained:

“At the national level, the direction is clear, but at the provincial level, we have to interpret what the policy means for our districts. Sometimes we need to adjust the implementation because local capacities are different.” (Provincial government representative)

This account illustrates that provincial actors do not simply relay national policy directives. Rather, they interpret broader institutional expectations and assess how these can be translated into forms that correspond with regional and district-level capacities. Provincial actors therefore perform an intermediary function, connecting general policy direction with the diverse conditions faced by implementing institutions. A similar process occurs at the district level:

“The national policy gives us direction, but the situation in the district is different. We must adjust the program to the community context.” (District government representative)

The distinction between national “direction” and district “situation” reveals another layer of communicative translation. District actors adapt broader policy expectations to available resources, institutional capacities, and socioeconomic conditions. Policy implementation therefore involves contextual adjustment rather than uniform replication across governance levels.

At the local level, empirical evidence further demonstrates how coordination is reorganised around practical relationships among community-based actors. One tourism community representative described how local tourism groups were organised into five regional clusters, each coordinated through regional representatives, explaining that this arrangement made it easier to coordinate programmes and address emerging issues. As the participant stated:

“There are five regional coordinators. When we have a programme or something that needs to be resolved, it becomes easier for us to coordinate.” (Local tourism community representative, translated from Indonesian)

This account demonstrates that local implementation does not merely receive policy direction from higher governance levels. Local actors develop their own coordination arrangements to make broader institutional objectives workable within specific territorial and organisational contexts. The clustering of community groups represents a practical adaptation of governance coordination to local conditions.



Taken together, these findings reveal a differentiated pattern of communicative translation across governance levels. National institutions establish broad standards and policy expectations; provincial actors mediate and interpret these expectations across jurisdictions; district actors translate them into operational programmes; and local actors reorganise coordination according to community structures and situated implementation needs. Table 2 summarises these empirical patterns.

Table 2. Patterns of Communicative Translation Across Governance Levels

Governance Level	Primary Communication Function	Empirical Pattern	Implication for Coordination
National	Strategic direction and institutional standards	Establishes recommendations, reporting expectations, and broad governance requirements	Provides an overarching institutional framework
Provincial	Mediation and interpretation	Interprets broader policy direction and reconciles it with variations in district capacities	Connects national expectations with subnational implementation
District	Operational translation	Adjusts programmes to institutional capacity and community contexts	Makes policy direction operationally feasible
Local	Contextual coordination	Organises actors through locally adapted coordination arrangements, including community-based clusters	Connects broader governance objectives with everyday implementation

These patterns demonstrate that policy communication operates through differentiated but interconnected functions. Coordination is sustained not because messages remain unchanged as they travel across governance levels, but because actors continuously translate institutional expectations into forms that are meaningful and actionable within their respective contexts. At the same time, such translation may become fragmented when communication between levels lacks continuity or when broader policy expectations do not sufficiently account for implementation conditions.

Conceptually, communicative translation differs from routine policy implementation or administrative adaptation because it concerns the transformation and negotiation of policy meaning as institutional expectations move across governance levels. Administrative adaptation primarily



refers to adjustments in programmes, procedures, or implementation arrangements in response to local conditions. Communicative translation, by contrast, occurs through interpretive and relational processes in which actors determine what broader policy expectations mean within their institutional context, reconcile them with different capacities and priorities, and reformulate them into actionable understandings for other actors. The distinction is therefore not simply between implementing a policy uniformly or adapting it locally, but between adjusting implementation arrangements and communicatively reconstructing policy meaning across institutional boundaries. In this sense, communicative translation constitutes a coordination mechanism that enables actors across governance levels to maintain sufficient alignment while accommodating contextual differences.

From this perspective, communicative translation constitutes a central component of communication architecture. The empirical pattern shows how communication architecture connects different governance levels while allowing policy meanings and coordination arrangements to be adapted along the way. Institutional alignment therefore depends on maintaining sufficient continuity in overall policy direction while enabling actors at provincial, district, and local levels to interpret and operationalise that direction according to their respective institutional and community contexts.

Authority and Legitimacy in Practice

The empirical findings indicate that formal authority alone does not automatically produce effective coordination across governance levels. Although national institutions establish policy directions, standards, and institutional expectations, the practical meaning of these directives depends on how they are communicated, interpreted, and negotiated by actors responsible for implementation. Authority therefore operates not only through formal mandates but also through communicative processes that connect policy expectations with institutional capacities and implementation realities.

At the national level, formal authority is articulated through institutional standards and accountability requirements. This was evident in a presentation by the national geological authority during the geopark revalidation process:

“The recommendations are not to be ignored; they must be implemented and reported periodically.” (National geological authority representative, translated from Indonesian)

The presentation further emphasised that communication with UNESCO would continue when particular recommendations had not yet been fully addressed. This illustrates how formal authority establishes institutional expectations and reporting obligations. However, compliance with these expectations still requires coordination among actors operating at different governance levels, particularly when responsibilities and implementation capacities are distributed across institutions.

At the provincial level, this relationship between formal expectations and operational realities becomes more explicit. A provincial coordinating official explained:

“We often have to explain national priorities to local actors, but at the same time we also need to negotiate what is realistically implementable.” (Provincial coordinating official)

This account demonstrates that provincial actors perform a dual communicative function. They communicate higher-level policy priorities to actors at lower governance levels while

simultaneously negotiating the practical feasibility of those priorities. The phrase “realistically implementable” highlights that formal authority cannot simply be transmitted downward; it must be interpreted in relation to institutional resources, administrative capacities, and local conditions.

The tension between formal authority and implementation capacity becomes particularly visible at the district level:

“Sometimes, the targets are very ambitious. But in the district, we have to deal with budget limitations and local economic pressures.” (District government official)

This account illustrates how policy expectations are evaluated against concrete institutional constraints. District actors may formally acknowledge higher-level targets while simultaneously confronting budgetary limitations and competing local priorities. Under these conditions, coordination requires actors to communicate constraints, negotiate responsibilities, and determine how formal expectations can be translated into feasible action.

The findings therefore reveal an important distinction between formal authority and operational authority. Formal authority derives from institutional mandates, policy frameworks, and administrative positions. Operational authority, by contrast, depends on the capacity to translate those mandates into actions that can be implemented and recognised by other actors. When formal expectations correspond with available capacities, coordination can proceed with greater stability. When the two diverge, communication becomes necessary to recalibrate expectations and negotiate the practical scope of responsibility.

Conceptually, these findings suggest a distinction among formal authority, operational authority, and communicative legitimacy. Formal authority derives from institutional mandates, regulatory frameworks, and recognised administrative positions. Operational authority refers to an actor’s practical capacity to translate those mandates into feasible and coordinated action. Communicative legitimacy, by contrast, concerns the extent to which an actor is recognised by others as having a credible and legitimate basis to speak, represent interests, interpret policy expectations, or participate in shaping coordination. Such legitimacy may derive from formal position, organisational representation, expertise, community recognition, or sustained involvement in governance processes. While these three dimensions may overlap, they are analytically distinct: an actor may possess formal authority without sufficient operational capacity, or may exercise communicative legitimacy without holding a formal governmental mandate. Coordination therefore depends not only on who formally holds authority, but also on whose interpretations and representations are recognised as legitimate within the governance process.

The empirical material also demonstrates that legitimacy within the governance system does not derive exclusively from governmental authority. Non-governmental actors may enter coordination processes with representational mandates derived from their organisational constituencies. A professional association representative explained:

“I was elected and given a mandate by my colleagues in 2016, so I have now served for two terms.... There are approximately 125 members.” (Professional association representative, translated from Indonesian)

The participant represented an association comprising approximately 125 members across hotels, restaurants, and affiliated organisations. This account illustrates a form of representational legitimacy that differs from bureaucratic authority. The participant’s legitimacy to speak within coordination settings derives not from a governmental position but from an organisational mandate and a recognised constituency.

Taken together, these findings indicate that authority and legitimacy within multilevel governance emerge from multiple institutional sources. Government actors carry formal administrative mandates, while professional, community, and other non-governmental actors may possess legitimacy based on organisational representation, expertise, or social recognition. These different bases of authority can shape actors' capacity to participate in coordination and influence how their positions are recognised by others.

Communication is therefore central to the relationship between authority and legitimacy. Cross-level forums, feedback processes, and interorganisational interactions provide spaces in which policy expectations are explained, implementation constraints are communicated, and competing responsibilities are negotiated. Authority becomes practically effective when actors are able to connect formal mandates with operational realities, while legitimacy is strengthened when actors' institutional or representational positions are recognised within the coordination process. Within the communication architecture identified in this study, authority negotiation therefore functions as a mechanism for maintaining institutional alignment among actors with different mandates, resources, and capacities. Authority is not treated as a fixed institutional attribute but as a relational process whose effectiveness depends on how mandates are communicated, interpreted, negotiated, and recognised across governance levels. This finding demonstrates that coordination is sustained not solely through hierarchical enforcement but through the continuous communicative alignment of institutional expectations and implementation realities.

Formal and Informal Coordination Dynamics

The empirical findings further demonstrate that coordination within the governance system operates through the interaction between formal institutional mechanisms and informal communication practices. Formal mechanisms, including coordination meetings, institutional forums, official correspondence, and inter-agency procedures, provide recognised spaces in which actors exchange information, clarify responsibilities, and discuss policy priorities. However, interview accounts indicate that these formal arrangements are frequently complemented by more immediate and flexible forms of interpersonal and digitally mediated communication.

One participant involved in inter-agency coordination explained:

“If we wait for formal meetings, the process takes too long. Sometimes we just call directly or use our WhatsApp group.” (Interagency coordination actor)

This account illustrates a practical reason for the use of informal communication: speed. Formal meetings require scheduling and administrative procedures, whereas direct telephone calls and WhatsApp exchanges allow actors to clarify information and respond to emerging coordination needs more rapidly. Informal communication therefore serves an operational function by maintaining communication between formal institutional encounters. A similar pattern was described by A representative of a professional tourism association explained:

“Usually, we confirm it directly through WhatsApp, although formally it should be communicated through an official letter.” (Professional association representative, translated from Indonesian)

The original interview indicates that information and data exchange was often confirmed directly through WhatsApp, even though the participant acknowledged that formal correspondence would normally be expected. This illustrates that informal communication does not necessarily replace

formal procedures. Instead, it may precede, accelerate, or complement them, allowing coordination to proceed while formal administrative requirements remain in place.

The boundary between formal and informal communication becomes even less distinct when the same digital channel is used for both interpersonal messages and official documentation. A tourism business representative described the sequence through which information and formal invitations were communicated:

“First through WhatsApp; if I do not read it, they call. The official invitation is then sent again through WhatsApp.... Usually, it is in PDF format.” (Tourism business representative, translated from Indonesian)

The interview further indicated that initial information about an activity was communicated through WhatsApp, followed when necessary by telephone communication, while formal invitations were subsequently distributed electronically as PDF documents through the same platform. This finding demonstrates that the distinction between formal and informal communication is not determined solely by the technological medium. WhatsApp can simultaneously function as an interpersonal communication channel and as an infrastructure for distributing formal institutional documents.

These patterns suggest that formal and informal communication should not be understood as two separate coordination systems. Rather, they operate in combination and perform different but complementary functions. Formal mechanisms provide institutional legitimacy, procedural structure, documentation, and accountability. Informal communication provides speed, flexibility, accessibility, and continuity between formal encounters. Coordination is therefore sustained through the interaction of both modes rather than through either one independently.

The empirical material also points, however, to an important limitation of informal coordination. Access to relational communication networks is not evenly distributed across actors. The broader research data indicate that core coordinating actors communicate frequently through informal channels, whereas some peripheral actors experience weaker access to ongoing coordination. One field-level participant, for example, expressed frustration about the absence of sustained communication:

“For the past few months, we have been left without contact.... They have not appeared for months. What are we supposed to do? What guidance have they given us?” (Local site-level actor, translated from Indonesian)

The broader analysis of the research data identifies this pattern as a difference between actors located within core informal coordination networks and actors positioned at the periphery of those networks. This suggests that the same informal communication channels that increase coordination efficiency for well-connected actors may also produce unequal access to information for actors who are less embedded in relational networks.

The empirical pattern therefore reveals a tension between coordination efficiency and participation inclusiveness. Informal channels enable rapid interaction and adaptive responses, but their effectiveness often depends on pre-existing professional and interpersonal connections. Actors who are strongly embedded within these networks may receive information more quickly and participate in discussions more frequently, while those outside the core networks may depend primarily on formal forums or episodic invitations.

Formal coordination mechanisms consequently remain important not merely as bureaucratic procedures but as mechanisms for visibility, accountability, and potentially broader participation. Formal forums can create recognised spaces in which actors outside the core relational network

have opportunities to access information and articulate their positions. However, when substantial discussion and coordination have already occurred through informal channels before formal forums take place, the formal process may have a more limited role in shaping substantive decisions.

The implications of informal coordination therefore extend beyond inclusiveness to questions of accountability and transparency. When substantive discussions or preliminary decisions occur through interpersonal relationships, telephone calls, or closed digital messaging groups, these processes may not be systematically documented or equally visible to actors outside the core network. This can make it more difficult to trace how particular decisions were reached, who participated in shaping them, and how responsibilities were assigned. For community and peripheral actors with limited access to informal networks, the lack of visibility may further restrict their ability to obtain timely information, provide input, or hold coordinating actors accountable. Informal communication can therefore strengthen responsiveness while simultaneously creating risks of uneven participation, limited decision traceability, and reduced transparency unless important outcomes are subsequently documented and incorporated into formal coordination processes.

These findings demonstrate that communication architecture within multilevel environmental governance is constituted through the interaction of formal, informal, and hybrid communication practices. Formal communication provides institutional legitimacy and accountability; informal communication enables rapid and adaptive coordination; and hybrid practices emerge when digital platforms such as WhatsApp simultaneously facilitate interpersonal interaction and the circulation of official documents.

The effectiveness of this communication architecture therefore depends on maintaining an appropriate relationship between these different communication modes. Informal networks can strengthen responsiveness when they complement formal mechanisms, but they may weaken inclusiveness when access to information and influence becomes concentrated within established relational networks. Coordination should therefore not be evaluated solely in terms of how quickly actors communicate, but also in terms of how communication structures determine who gains access to information, who participates in coordination, and whose perspectives are represented within governance processes.

Discussion

The findings demonstrate that coordination in multi-level environmental governance is not achieved through institutional arrangements alone. Instead, it emerges through a patterned configuration of communicative processes that connect actors across governance levels and organisational boundaries. Three interrelated mechanisms are particularly important: the translation of policy meaning across levels, the negotiation of authority and legitimacy, and the interaction between formal and informal coordination practices. Together, these mechanisms constitute what this study conceptualises as communication architecture: the organised configuration of communicative flows and relationships through which governance actors interpret policy, negotiate institutional roles, and sustain alignment across a fragmented governance system.

This perspective extends network and collaborative governance scholarship, which has traditionally emphasised institutional interdependence, participation, and interaction among actors (Ansell and Gash, 2008; Emerson et al., 2012; Klijn and Koppenjan, 2015). While these perspectives explain why actors need to coordinate, the present findings provide additional insight

into how such coordination is continuously produced in practice. Interaction alone does not necessarily generate alignment. Actors operating at different governance levels may participate in the same governance system while holding different interpretations of policy priorities, authority, responsibilities, and implementation constraints. Coordination therefore depends on communicative processes that enable these differences to be interpreted, negotiated, and temporarily aligned.

The first contribution of this study concerns organisational communication. Existing research has demonstrated that communication is central to organising and interorganisational relationships (Putnam and Krone, 2007; Schoeneborn et al., 2019; Vásquez and Schoeneborn, 2018). The findings extend this perspective by showing that communication across a multi-level governance system is not limited to episodic interaction between organisations. Rather, coordination depends on the broader configuration through which communication flows across vertical and horizontal institutional boundaries. From this perspective, communication architecture directs analytical attention to how policy messages move, where they are interpreted, who mediates between institutional levels, how feedback circulates, and which formal or informal channels become influential in coordinating action.

The empirical findings on policy translation illustrate this process particularly clearly. Policy directives originating at higher governance levels were not simply transmitted downward in an unchanged form. Provincial and district actors interpreted and reformulated policy directions according to institutional capacities, sectoral priorities, resource constraints, and local conditions. This suggests that vertical communication in multi-level governance functions through translation rather than linear transmission. Such translation is not necessarily evidence of implementation failure; instead, it may constitute an essential mechanism through which broad policy directions become operationally meaningful across different institutional contexts. Communication architecture therefore helps explain how dispersed actors maintain sufficient coherence while adapting policy meaning to the conditions in which implementation occurs.

This finding also contributes to environmental governance scholarship. Much of the literature explains coordination through institutional design, regulatory frameworks, decentralisation, networks, or collaborative arrangements (Biermann and Pattberg, 2008; Young, 2017). These institutional conditions remain important, but the present findings suggest that formal structures do not automatically produce institutional alignment. Alignment must be continuously constructed as actors interpret policy expectations, reconcile institutional responsibilities, and respond to differences in implementation capacity. In this sense, coordination should be understood as an ongoing communicative accomplishment rather than a stable institutional outcome.

The findings concerning authority further support this argument. Multi-level governance distributes authority across institutional levels, but formal mandates alone do not determine how authority operates in practice. National policy direction may establish formal expectations, while provincial and district actors determine how those expectations can be translated into feasible action. Authority is therefore mediated through communication in which actors explain priorities, negotiate constraints, and assess what can realistically be implemented. This extends collaborative governance perspectives that emphasise negotiation and interaction (Emerson et al., 2012) by demonstrating that the practical legitimacy of authority depends partly on whether policy expectations can be communicatively connected to operational realities.

The distinction between formal authority and operational authority is particularly important. Formal authority derives from institutional position and regulatory mandates, whereas operational

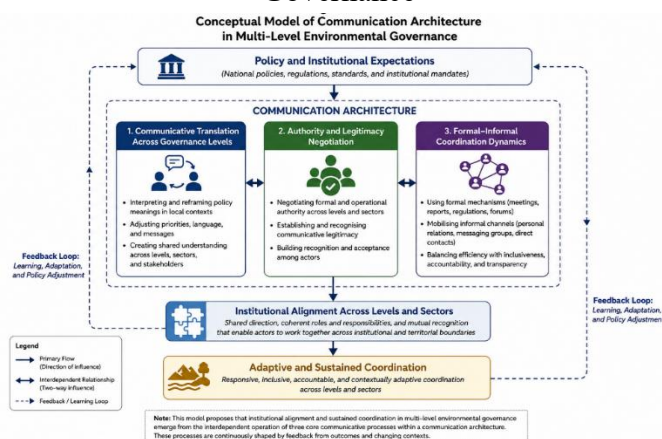
authority depends on actors' capacity to translate expectations into coordinated action. When policy targets are perceived as disconnected from local resources or socioeconomic realities, formal mandates may remain intact while their practical legitimacy becomes weakened. Communication therefore performs a critical mediating function between institutional authority and implementation capacity. Through feedback mechanisms, coordination forums, and cross-level interactions, governance actors continuously recalibrate expectations and responsibilities. Authority, from this perspective, is not simply exercised downward but is stabilised through ongoing communicative recognition and negotiation.

A third contribution concerns Global South governance scholarship. Governance systems in many Global South contexts are characterised by institutional hybridity, uneven administrative capacities, and the coexistence of formal and informal coordination mechanisms (Bierschenk and Olivier de Sardan, 2014; Cleaver, 2012). The present findings show that informal communication should not be treated merely as a deviation from formal governance procedures. Direct telephone communication, interpersonal relationships, and digital messaging platforms may function as important adaptive mechanisms that enable actors to respond quickly when formal coordination processes are slow or procedurally constrained.

However, the findings also reveal a tension between adaptive efficiency and inclusive participation. Informal networks can accelerate information exchange and problem solving, but access to these networks is unevenly distributed. Actors with strong institutional or interpersonal connections may gain earlier access to information and greater influence over emerging decisions, whereas community actors or less institutionally connected participants may remain peripheral to informal coordination processes. Communication architecture therefore does not only enable coordination; it can also reproduce asymmetries in visibility, access, and influence.

This finding adds nuance to discussions of institutional hybridity in governance. The effectiveness of hybrid coordination arrangements cannot be assessed solely according to their capacity to accelerate decision making. Their implications for inclusion must also be considered. Formal mechanisms may offer greater procedural visibility and accountability but can be slow and inflexible, while informal mechanisms may improve responsiveness but risk concentrating influence among well-connected actors. Effective environmental governance therefore requires an institutional arrangement in which informal communication complements rather than substitutes inclusive formal coordination processes.

Figure 1. Conceptual Model of Communication Architecture in Multi-Level Environmental Governance



Based on Figure 1, this study proposes that institutional alignment in multi-level environmental governance is not an automatic outcome of formal institutional design but is communicatively produced through the interdependent operation of policy translation, authority and legitimacy negotiation, and formal–informal coordination. These processes constitute a communication architecture in which policy meanings are translated across governance levels, authority becomes operational through negotiation and recognition, and formal and informal communication mechanisms jointly sustain coordination. Institutional alignment emerges when these communicative processes remain sufficiently connected across levels and sectors, while fragmentation may occur when translation breaks down, authority lacks recognition, or access to coordination networks becomes uneven.

Taken together, these findings position communication architecture as a framework for analysing how coordination is organised across multi-level governance systems. Its analytical value lies in connecting three dimensions that are often examined separately: the movement and translation of policy meaning, the communicative negotiation of authority, and the relationship between formal and informal coordination channels. Rather than assuming that institutional structures or governance networks automatically generate coordination, this perspective examines the communicative configurations through which actors become sufficiently aligned to act collectively.

The study therefore makes three related contributions. For organisational communication, it extends attention from individual interactions to the patterned configuration of communication across interorganisational and multi-level systems. For environmental governance, it demonstrates that institutional alignment is continuously produced through policy translation and authority negotiation rather than guaranteed by institutional design. For Global South governance scholarship, it highlights how formal and informal communication mechanisms jointly sustain coordination while simultaneously creating tensions between responsiveness and inclusion.

Conceptualising these processes as communication architecture offers a way to understand why governance systems with similar formal structures may nevertheless display different capacities for coordination. The effectiveness of multi-level governance may depend not only on which institutions exist or which actors participate, but also on how communicative relationships are configured across institutional boundaries. Future research can further examine whether different forms of communication architecture produce different patterns of coordination, legitimacy, inclusion, and adaptive capacity across governance settings.

CONCLUSION

Coordination in multi-level environmental governance cannot be adequately explained through institutional design or actor interaction alone. This study demonstrates that coordination is sustained through structured communicative processes that organise how policy meanings are translated, authority is negotiated, and institutional relationships are aligned across governance levels. Communication therefore functions not merely as a supporting instrument but as an architecture through which coordination is produced, stabilised, and adapted within complex and fragmented governance systems. By conceptualising communication architecture as the patterned configuration of communicative flows, translation practices, authority negotiations, and formal–informal coordination mechanisms, this study advances a communication-centred explanation of institutional alignment in environmental governance.

The findings further show that governance effectiveness depends not only on formal mandates and collaborative intentions but also on actors' capacity to maintain coherent communication across institutional levels and sectors. Policy directions are not simply transmitted from higher to lower levels but are interpreted and adapted to different institutional and local contexts. Likewise, formal authority becomes operationally meaningful through continuous negotiation among actors, while informal communication networks complement formal coordination mechanisms by enabling faster and more flexible responses. However, these informal arrangements may also create unequal access to information and influence. These findings highlight the need to understand coordination as an ongoing communicative accomplishment rather than an automatic outcome of institutional structures.

Practically, these findings suggest that communication architecture should be institutionalised through several complementary mechanisms. Government agencies and environmental governance networks can establish regular cross-level coordination and feedback forums supported by scheduled reporting cycles, shared action logs, and clearly assigned responsibilities for communicating implementation constraints and follow-up actions across governance levels. Policy translation and boundary-spanning functions can be formalised by designating liaison officers or coordination focal points within relevant agencies or network secretariats to interpret policy directions, facilitate communication across levels, and relay feedback between institutional actors. Informal communication should also be connected to formal accountability mechanisms by documenting substantive agreements or decisions reached through interpersonal or digital channels in official minutes, decision registers, or follow-up records. Finally, inclusive coordination arrangements can be strengthened through explicit stakeholder representation mechanisms, regular participation of community and peripheral actors in formal forums, and systematic dissemination of coordination outcomes to actors who may have limited access to informal networks. These arrangements can preserve the responsiveness of informal communication while strengthening inclusiveness, transparency, accountability, and continuity across the governance system.

This study has several limitations. First, the research was conducted within a single regional governance setting in Banyuwangi Regency, Indonesia. Although the case provides an in-depth understanding of communication processes within a multi-level environmental governance system, the findings may not be directly transferable to governance settings characterised by different political, institutional, administrative, or sociocultural conditions. Second, the study relied primarily on qualitative interviews with purposively selected institutional actors, complemented by documentary evidence. While this approach enabled detailed exploration of actors' interpretations and coordination practices, it may not fully capture the experiences of actors with weaker institutional visibility or limited access to formal and informal communication networks, nor does it allow statistical generalisation or causal testing. Future research could therefore conduct comparative studies across regions or countries to examine the transferability of the communication architecture framework under different governance conditions. Longitudinal research could explore how communication patterns, authority relations, and institutional alignment evolve during policy changes, environmental crises, or governance transitions. Mixed-method designs combining qualitative inquiry with social network analysis or other quantitative approaches could further examine the structural properties of communication networks and assess how different communication architectures relate to coordination effectiveness, inclusion, legitimacy, and adaptive capacity.

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