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Government communication and mediation strategies in environmental conflicts: Addressing church-community coalition in geothermal project

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ABSTRACT

Background: The Mataloko Geothermal Power Plant in Ngada Regency, East Nusa Tenggara, exemplifies this tension, facing strong resistance from local communities and the Catholic Church despite technical potential. Since the late 1990s, the project has experienced repeated failures, causing environmental degradation, water contamination, agricultural decline, and health impacts from hydrogen sulfide exposure. Church involvement transforms this into a value-based conflict requiring ethical sensitivity. While environmental mediation is recognized as the most relevant conflict resolution mechanism in Indonesia, its effectiveness depends on government sensitivity to local social and religious contexts. **Methods:** This qualitative research employs systematic literature review analyzing the conflict through Johan Galtung's Conflict Theory (violence triangle), Timothy Coombs' Situational Crisis Communication Theory (crisis attribution), and Parsons' Structural-Functional Theory (AGIL paradigm). Data synthesis from academic literature, policy documents, and reports identifies conflict patterns and mediation failures. **Findings:** The conflict manifests fundamental contradictions between national development paradigms and local realities, including geological incompatibility, conflicts between state ownership and indigenous cosmology (mori watu mori tana), and asymmetric power relations. Government communication has been defensive rather than accommodative as required for high-responsibility crises, with transparency claims contradicted by guerrilla-style approaches and document manipulation. Mediation failed due to lack of structural independence when the provincial government formed teams involving conflicting parties. AGIL analysis reveals systemic dysfunction: adaptation failure to local conditions, contradictory goal attainment, integration breakdown, and cosmological value clashes. **Conclusion:** Effective environmental mediation requires transformative approaches emphasizing structural independence, forensic audits, local cosmology recognition, full accountability, and strengthened institutional capacity, demanding political will to reorient extractive paradigms toward sustainable alternatives. **Novelty/Originality of this article:** This research provides the first comprehensive theoretical integration specifically for geothermal conflicts involving religious institutions in Indonesia, developing a practical justice-oriented framework addressing power asymmetries, indigenous epistemologies, and prophetic witness roles in environmental governance.

KEYWORDS: community-church, conflict, environmental, Mataloko, mediation.

1. Introduction

The development of geothermal energy in Indonesia constitutes an integral component of the national strategy to accelerate the transition toward renewable energy and reduce dependence on environmentally detrimental fossil fuel sources. However, across various regions, geothermal projects present a developmental paradox whereby, on one hand, they

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promise economic progress and energy independence, while on the other hand, they generate complex ecological, social, and cultural conflicts. One of the most prominent cases is the environmental conflict in Mataloko, Ngada Regency, East Nusa Tenggara, where government efforts to develop a Geothermal Power Plant (GPP) have encountered strong resistance from local communities and religious institutions.

Research by Aditya (2017) affirms that Mataloko possesses highly viable geothermal potential for development to enhance the electrification ratio in the NTT region. Nevertheless, as documented in studies by Bupu (2024) in Ngada and Jemadin (2024) in Manggarai, the development of similar projects frequently precipitates environmental scarcity, land use alterations, and the loss of indigenous community living spaces. In the Mataloko context, community opposition is rooted not only in ecological and economic concerns but also in spiritual and moral dimensions, as the Catholic Church, functioning as a religious institution, stands alongside the people in opposing potential environmental degradation perceived as threatening God's creation.

The Church's involvement in environmental advocacy adds complexity to the conflict dynamics. The Church functions not merely as a moral actor but also as a social institution possessing substantial symbolic authority within NTT society. From the perspective of Religious Institutions in Environmental Governance and Church–Community Coalition Dynamics, the Church's presence strengthens community solidarity and transforms the conflict from a mere clash of economic interests into a value-based conflict requiring ethical and cultural sensitivity from the government. Consequently, communication and mediation strategies employed by both local and central government must account for religiosity factors and the Church's social capital to ensure that dialogue and dispute resolution processes do not engender deeper polarization.

Thus far, governmental communication approaches in addressing resistance from the Church and community have been perceived as insufficiently transparent, participatory, and empathetic. Limited socialization, inadequate community involvement in the planning phase, and top-down approaches have exacerbated tensions at the local level. Furthermore, a study by Illahi & Ambarwati (2025) emphasizes that environmental mediation represents the most relevant conflict resolution mechanism in Indonesia, as it is more flexible, cost-effective, and ensures direct stakeholder participation. However, mediation effectiveness is highly contingent upon government sensitivity in interpreting local social and religious contexts. Without empathetic communication and recognition of the Church's role as the moral representation of the community, mediation will function merely administratively rather than transformatively.

Therefore, based on this introduction, this article will address several critical points leading to the development of a practical framework for communication and mediation strategies applicable by Local Government: identifying conflicts arising from geothermal project development in Mataloko; formulating communication and mediation strategies specifically designed to strengthen government interaction with the Church–community coalition; developing a practical framework adaptable by government actors in addressing similar environmental conflicts in the future.

2. Methods

This study adopts a qualitative approach with literature review as the principal strategy for data collection and analysis. The qualitative approach was chosen for its capacity to explore complex social phenomena through in-depth examination of contexts, experiences, and perspectives across various bibliographic sources (Lim, 2025). Literature review constitutes a systematic approach to gathering, synthesizing, and analyzing relevant academic literature, involving critical processes of evaluating, comparing, and integrating findings to generate comprehensive understanding (Snyder, 2019).

This article employs three theoretical frameworks to address the research questions. First, Johan Galtung's conflict theory introduces the violence triangle concept encompassing three forms, namely direct violence as physical manifestations, structural violence as

systematic barriers without identifiable perpetrators, and cultural violence as values and customs legitimizing the other two forms (Khaswara & Hambali, 2021). Galtung's framework enables deconstruction of complexities involving religious actors, ranging from physical impacts of development and structural inequalities in decision-making to value contestation between development narratives and the spiritual-ecological dimensions of local communities. Second, Coombs' Situational Crisis Communication Theory emphasizes crisis responsibility assessment as a determinant of organizational communication strategy (Coombs, 2016). The theory classifies crises according to responsibility attribution levels and recommends responses ranging from defensive to accommodative approaches. Its application aims to identify discrepancies between governmental communication strategies and ideal strategies based on the situational characteristics of the crisis. Third, Parsons' structural-functional theory conceptualizes society as an integrated system requiring four functional imperatives within the AGIL paradigm. Adaptation refers to the capacity to address external situations, Goal attainment involves definition and mobilization toward objectives, Integration regulates inter-component relationships, and Latency maintains motivational and cultural patterns. These four functions are interdependent, as failure in one impedes the entire system's operation (Prasetya et al., 2021; Sciortino 2021). This method facilitates comprehensive synthesis of existing knowledge, identification of developmental trends, and discovery of research gaps as foundations for conceptual framework development or future research agendas.

3. Results and Discussion

3.1 Chronological development of the Mataloko geothermal project (1998-2025)

The Mataloko Geothermal Power Plant conflict in Ngada Regency, East Nusa Tenggara, represents a 27-year trajectory of failed development attempts with escalating socio-ecological consequences. Initial development occurred through Ministry of Energy and Mineral Resources collaboration with Japan's New Energy Development Organization (NEDO) during 1998-2000, targeting 65-megawatt capacity across five square kilometers approximately 15 kilometers from Bajawa (Nuka, 2025; ESDM, 2008).

The conflict chronology unfolded through four distinct development phases marked by technical failures and mounting environmental degradation. During the exploration and initial failure phase (1998-2005), early exploration encountered repeated drilling failures producing uncontrolled steam vents, with fifth and sixth wells drilled in 2005 reaching only approximately 600 meters depth, insufficient for stable steam production (Ahmad et al., 2022). The brief operation and collapse phase (2006-2012) saw a 2.5-megawatt plant inaugurated in 2006 commence operations in 2010, supplying nearly 60 percent of Bajawa's electricity requirements, yet the plant collapsed within months due to unstable steam pressure from shallow wells (Ahmad et al., 2022; Seo, 2025). Following temporary repairs, the attempted recovery phase (2013-2020) witnessed operations resume between 2013-2015 but ultimately cease when 5-megawatt steam capacity proved insufficient for turbine operation, while reactivation attempts in 2019 costing 108 billion rupiah were abandoned in 2020 due to hazardous sulfur gas emissions (Taris & Rastika, 2025).

Environmental degradation accelerated throughout these operational failures, fundamentally altering the conflict's nature from technical challenges to socio-ecological crisis. Since 2006, Turetogo Village residents confronted expanding hot steam vents emitting hydrogen sulfide, with initial isolated occurrences increasing to approximately 20 points by April 2025 (Nuka, 2025). The NTT Governor's Task Force attributed these manifestations to reservoir pressure alterations and increased surface permeability creating new surface fractures (Floresa, 2025). Water resource contamination emerged as critical concern when extraction from Tiwu Bala River for drilling operations generated fears about declining discharge threatening downstream irrigation, while previously potable springs including Wae Mosa and Wae Kusi became turbid with sulfurous odors (Floresa, 2025; Nuka, 2025). Documentation revealed discrepancies between

Environmental Impact Assessment specifications identifying Mataia spring and actual implementation using Waeluja spring, five kilometers distant (Taris & Rastika, 2025; Nuka, 2025). The economic and health impacts intensified as hydrogen sulfide emissions corroded zinc roofing within six months and destroyed agricultural crops constituting community economic foundations, while prolonged exposure triggered skin infections, respiratory distress, and eye irritation without meaningful healthcare infrastructure enhancement (Floresa, 2025; Nuka, 2025).

Despite accumulated failures, the expansion phase (2021-2025) saw PT PLN advance construction targeting 2×10 megawatt capacity for December 2031 operation, with four new 2,000-meter wells at 79.57 percent completion as of April 2025 (Brilian et al., 2024; Seo, 2025). This decision catalyzed organized resistance as communities established the Forum of Environmentally Concerned Communities of Saint Joseph Parish Laja in October 2024. The conflict escalated significantly when Archbishop Paulus Budi Kleden SVD issued a January 2025 directive requesting priests inform parishioners about geothermal impacts, followed by a 2025 Pre-Lenten Pastoral Letter signed by six bishops declaring geothermal incompatible with Flores' tourism, agriculture, and maritime development priorities (Effendy, 2009; Nuka, 2025). March 12, 2025 demonstrations involving clergy and hundreds of residents at Regional House of Representatives and Regent's offices demanded drilling cessation (Taris & Rastika, 2025). Father Reginald Piperno exposed non-transparent tactics in project socialization targeting influential figures rather than broad community engagement (Taris & Rastika, 2025; Nuka, 2025), while community members like Dominikus Losa defended ancestral offering altars embodying mori watu mori tana cosmology where ancestors remain true landowners (Nuka, 2025).

Mediation attempts throughout 2025 revealed fundamental stakeholder divisions that perpetuated the conflict. PT PLN claimed over 40 Free, Prior, and Informed Consent socialization sessions and Corporate Social and Environmental Responsibility programs including free healthcare and small business training, maintaining the project as a national strategic program with government backing (Taris & Rastika, 2025; Nuka, 2025). Ngada Regent Raymundus Bena acknowledged the dilemma between securing national programs and addressing community grievances, indicating intention to form an internal investigative team (Taris & Rastika, 2025). NTT Governor Melki Laka Lena convened an April 4, 2025 closed meeting with Archbishop Budi expressing support for postponing development, subsequently requesting the Archdiocese send four representatives to join a Geothermal Development Problem Resolution Team involving PLN and developers (Nuka, 2025). However, the Archdiocese declined through response letter signed by Diocesan Secretary Rev. Damianus Dionisius Nuwa, arguing investigative teams must remain genuinely independent without parties implementing or rejecting the project (Nuka, 2025). JATAM's Melky Nahar stated the Governor need not form sampling teams since field facts sufficiently demonstrated damage, urging instead total operation cessation, independent forensic audits, legal enforcement, and full ecosystem restoration with compensation (Nuka, 2025). The Governor's Task Force recommended immediate resident relocation to safer areas, Regional Spatial Planning review, and redirecting Mataloko and Nage GPP toward Ngada Regency Geopark development (Floresa, 2025), while Vivat International elevated Mataloko to global human rights and environmental justice discourse through reports to UN Human Rights Council in Geneva (Taris & Rastika, 2025).

3.2 Conflict structure analysis: Galtung's ABC triangle

The Mataloko conflict emerges from three fundamental contradictions. Geological incompatibility manifests through 27 years of technical failures, revealing contradiction between technical rationality and political-economic imperatives that override empirical evidence. Ontological incompatibility exists between state concepts of land as instrumental resource and indigenous cosmology understanding land through *mori watu mori tana*, where ancestors remain true owners and *mata uma* represents not property but living ancestral presence (Nuka, 2025). Land acquisition thus constitutes cultural annihilation and

spiritual dispossession irreducible to economic compensation, reflecting broader tensions between modern state territorial sovereignty and indigenous peoples' rights (Lukuaka et al., 2025). Structural power asymmetry positions state and corporate actors with policy backing and resources against communities possessing only social capital, exemplified by Ngada Regent's dilemma between national program requirements and local aspirations (Taris & Rastika, 2025), where national interests structurally dominate despite communities bearing all negative impacts.

Stakeholder attitudes reflect mutually exclusive conflict perceptions. Government and PT PLN perceive the project as continuable through administrative procedures and symbolic compensation, evidenced by claims of 40+ FPIC sessions while maintaining 79.57 percent construction progress (Taris & Rastika, 2025; Nuka, 2025; Seo, 2025). Community and Church attitudes derive from lived experience of expanding damage—increasing steam vents from isolated occurrences to 20+ points, water contamination, and health impacts including skin infections and respiratory distress (Nuka, 2025; Floresa, 2025). Father Piperno's characterization of socialization as "guerrilla tactics" reflects perception of systematic exclusion from genuine decision-making (Taris & Rastika, 2025; Nuka, 2025). The Catholic Church's institutional attitude, articulated through six bishops' Pre-Lenten Pastoral Letter declaring geothermal inappropriate for Flores (Nuka, 2025), grounds opposition in theological commitments to integral ecology from Laudato Si' (Francis, 2015), transforming technical disputes into moral imperatives beyond negotiable interests. Individual attitudes like Maria Baka's assertion of dying or living on ancestral land express not economic calculation but cosmological identity inseparable from place, while Dominikus Losa's questioning why "Flores, the Island of Flowers, must be made full of holes" articulates threatened cultural identity and regional dignity (Nuka, 2025).

Documented behaviors demonstrate escalating conflict intensity. Government and developer behaviors include continuing drilling despite visible harm, preparing four new 2,000-meter wells, extracting water from undisclosed locations contrary to documentation (Taris & Rastika, 2025; Nuka, 2025), and proceeding toward 2031 targets at 79.57 percent completion (Brilian et al., 2024; Seo, 2025), signaling determination regardless of opposition. Community resistance evolved from individual opposition to organized collective action through the Forum of Environmentally Concerned Communities formation (October 2024) and March 12, 2025 mass demonstrations involving clergy and hundreds of residents (Taris & Rastika, 2025). The Archdiocese's Geothermal Advocacy Team conducting consolidation and assessments demonstrates institutional capacity for sustained resistance (Nuka, 2025). Most concerning, conflict escalation generated violence threats against priests, advocacy team members, and village heads (Nuka, 2025), indicating dangerous horizontal fragmentation between project supporters and opponents reflecting existential threat perceptions. Government response shows ambivalence—Task Force formation and Governor's April 4, 2025 meeting expressing postponement support appear accommodative, yet requesting Archdiocese join Resolution Teams with PLN reveals continued co-optation attempts rather than addressing structural problems, which the Archdiocese rejected, demonstrating sophisticated understanding of structurally compromised forums legitimizing predetermined outcomes (Nuka, 2025).

These components form mutually reinforcing cycles amplifying conflict. Fundamental contradictions generate oppositional attitudes expressed through confrontational behaviors, which deepen contradictions and harden attitudes. Violence threats strengthen community resolve and sharpen contradictions, while continued project advancement despite repeated failures deepens contradiction between technical rationality and political determination, generating increasingly militant opposition manifested in expanded mobilization. International attention through Vivat International's UN Human Rights Council reports (Taris & Rastika, 2025) indicates conflict transcends local boundaries, becoming a global case study in environmental justice, indigenous rights, and sustainable development paradigm failures.

3.3 Crisis communication analysis: SCCT application

Applying Coombs' Situational Crisis Communication Theory (2016), the Mataloko case combines two crisis types with maximum responsibility attribution. First, it constitutes organizational misdeeds with injuries, where management knowingly placed stakeholders at risk resulting in documented harm, evidenced by continuing operations despite known geological instability, proceeding with expansion after 2020 sulfur gas emergency, and extracting water from undisclosed locations contrary to environmental documentation (Taris & Rastika, 2025; Nuka, 2025). Second, it represents human breakdown accidents, where repeated preventable technical failures produced severe impacts. The 27-year history of drilling failures, plant collapses, and uncontrolled steam vent emergence demonstrates systematic preventability rather than unforeseeable accidents (Ahmad et al., 2022; Seo, 2025; Taris & Rastika, 2025). Since 2006, stakeholders experienced tangible harm including agricultural land destruction, commodity losses, housing damage from corroded roofing, and health disorders including acute respiratory infections, itching, and respiratory disturbances from hydrogen sulfide exposure (Nuka, 2025; Floresa, 2025). Under SCCT, this crisis profile demands maximum responsibility attribution requiring highly accommodative response strategies.

SCCT prescriptions for high-responsibility crises include full apology with public responsibility acceptance and stakeholder forgiveness requests, corrective action preventing recurrence and repairing damage, compensation addressing all harm categories, and transparent information about crisis causes, impacts, and remediation (Coombs, 2016; Kronewald & Rademacher, 2022). Actual strategies employed by PT PLN and government diverge fundamentally from these prescriptions. PT PLN's claimed 40+ FPIC sessions and CSR programs including free healthcare and SME training constitute ingratiation strategy, where crisis managers praise stakeholders and remind them of organizational good works (Coombs, 2016). This strategy suits low-responsibility crises but proves inappropriate when organizations bear clear causal responsibility. Evidence of strategy-responsibility mismatch includes no public apology from PLN or government acknowledging failures causing documented harm, no corrective action as operations continue with expansion rather than cessation with four new 2,000-meter wells proceeding toward 2031 targets (Brilian et al., 2024; Seo, 2025), symbolic compensation only through CSR programs that do not address root problems of ongoing ecological damage, and information manipulation evidenced by AMDAL documentation specifying Mataia spring extraction while implementation used Waeluja spring five kilometers away (Taris & Rastika, 2025; Nuka, 2025), with Father Piperno's characterization of "guerrilla tactics" indicating non-transparent engagement (Taris & Rastika, 2025; Nuka, 2025).

SCCT predicts that response strategies inadequate to crisis responsibility levels worsen reputational damage because publics expect organizations to demonstrate greater victim concern and appropriate behavior as responsibility attribution increases (Coombs, 2016; Kronewald & Rademacher, 2022). In Mataloko, gaps between community expectations for full accountability and substantive corrective action versus government and PLN's defensive, symbolic responses exacerbated reputational crisis. This manifests in delegitimization of government claims with Father Piperno and communities rejecting transparency assertions (Taris & Rastika, 2025; Nuka, 2025), escalated opposition transitioning from individual resistance to organized mass mobilization with institutional Church backing, international reputational damage through UN Human Rights Council attention (Taris & Rastika, 2025), and horizontal conflict intensification generating violence threats (Nuka, 2025). Communication failure reflects deeper structural problems, where organizations using defensive strategies signal unwillingness to fundamentally change operations, confirming community perceptions that their concerns are subordinated to project completion imperatives. This communication pattern parallels findings from other resource extraction conflicts where procedural participation through consultations and CSR

programs substitutes for substantive power-sharing in decision-making (Schilling-Vacaflor & Eichler, 2017).

3.4 Systemic dysfunction analysis: Parsons' AGIL framework

Adaptation refers to system capacity to adjust to external environmental conditions and mobilize necessary resources (Sciortino, 2021). The Mataloko project exhibits fundamental adaptation failure across geological and cultural dimensions. Geological maladaptation manifests through twenty-seven years of technical failures including shallow wells producing unstable steam at 600 meters, insufficient 5 MW steam capacity for turbine operation, and hazardous sulfur gas emergence (Ahmad et al., 2022; Seo, 2025; Taris & Rastika, 2025). Rather than adapting project design to site realities, the system responds by repeating failed approaches at larger scale through four new 2,000-meter wells (Brilian et al., 2024), revealing adaptation dysfunction where political commitments override technical feedback mechanisms. Cultural maladaptation appears through disregard for local agricultural systems and Flores cosmology, particularly mori *watu mori tana* concepts and *mata uma* sacred spaces (Nuka, 2025). Agricultural communities depend on water sources now contaminated and lands affected by steam vents (Floresa, 2025; Nuka, 2025). Failure to integrate indigenous cosmological understanding of land as ancestral relationships rather than instrumental resources reflects epistemic rigidity preventing genuine socio-cultural adaptation, paralleling broader patterns where indigenous epistemologies are systematically devalued relative to Western technical knowledge (Lukuaka, et al., 2025).

Goal attainment involves defining objectives and mobilizing resources for achievement (Parsons, 1951; Sciortino, 2021). The Mataloko system exhibits severe internal goal contradiction where the formal objective of providing electrical energy for community welfare produced opposite outcomes. Since 2006, documented impacts include expanding steam vents reaching 20+ points by April 2025, zinc roofing corrosion within six months, destroying agricultural crops, contaminated water sources rendering formerly potable springs turbid and sulfurous, and health disorders including skin infections, respiratory distress, and eye irritation (Nuka, 2025; Floresa, 2025). This contradiction between stated welfare goals and actual destructive impacts creates structural delegitimization where formal goals systematically producing opposite results lead affected populations to perceive fundamental dishonesty about project purposes, fueling systematic resistance from communities and Church institutions. The project is experienced not as development but as assault on livelihood foundations and cultural integrity, reflecting deeper structural problems in development paradigms prioritizing national energy targets and corporate profit motives over local community welfare, a pattern repeating across resource extraction contexts where development discourse obscures resource transfers from marginalized communities to economically powerful actors (Martinez-Alier, 2002).

Integration refers to coordination and solidarity among system components maintaining cohesion (Sciortino, 2021). Mataloko exhibits comprehensive integration failure manifesting through democratic mechanism collapse, information integrity breakdown, and institutional coordination failure. Father Piperno's revelation that project socialization used guerrilla tactics targeting influential figures rather than transparent broad engagement (Taris & Rastika, 2025; Nuka, 2025) indicates systematic exclusion from genuine participation, violating FPIC principles requiring free, prior, and informed consent. Information breakdown manifests through discrepancies between AMDAL documentation specifying Mataia Spring and actual implementation using Waeluja spring five kilometers away (Taris & Rastika, 2025; Nuka, 2025), constituting information manipulation undermining trust-based coordination. Institutional coordination failure appears through Ngada Regent's expressed dilemma between national program requirements and local aspirations (Taris & Rastika, 2025), revealing structural inability to coordinate vertical governance levels where local governments become transmission belts for national policies rather than genuine mediators. This vertical integration failure is compounded by horizontal fragmentation as violence threats against priests and advocates (Nuka, 2025) indicate dangerous polarization. The breakdown of integration reflects power asymmetries

structuring stakeholder relationships where coordination mechanisms systematically privileging some actors while marginalizing others make integration impossible because disadvantaged actors rationally withdraw from rigged processes, exemplified by the Archdiocese's rejection of Governor's Resolution Team invitation (Nuka, 2025).

Latency or pattern maintenance involves transmitting cultural values and maintaining actor motivation within systems (Sciortino, 2021). The Mataloko conflict represents profound latency crisis as Flores cosmological values emphasizing sacred ancestral relationships clash with instrumentalist energy development paradigms treating land as exploitable resource. The concept of mori watu mori tana understands ancestors as true landowners, with mata uma serving as offering altar symbolizing living space, ancestral presence, and origin of cultural rites (Nuka, 2025). Land in this cosmology is not property subject to economic transaction but constitute of identity and community continuity across generations. Dominikus Losa's defense of mata uma demonstrates that land acquisition constitutes cultural annihilation and spiritual dispossession, while Maria Baka's statement of willingness to die or live on ancestral land (Nuka, 2025) articulates bonds transcending instrumental rationality. The Catholic Church's 2025 Pre-Lenten Pastoral Letter signed by six bishops declaring geothermal inappropriate for Flores' development trajectory (Allerton, 2009; Nuka, 2025) represents latency function maintenance through articulating alternative development values affirming regional ecological and cultural character, drawing from Laudato Si' integral ecology framework emphasizing interconnection between social and environmental crises (Francis, 2015). This prophetic witness critiques structural injustice and articulates just, sustainable alternatives (Bedford-Strohm, 2010), despite violence threats escalating conflict to alarming levels (Nuka, 2025). The latency crisis reveals fundamental questions about what development means and whose values should guide regional futures, where development paradigms systematically contradicting local cultural values cause affected communities to experience not development but cultural destruction, generating existential resistance because what is threatened is meaning systems through which communities understand themselves and their place in the world.

Parsons' framework emphasizes that these four functions are interdependent, where failure in one dimension impedes entire system operation (Prasetya et al., 2021; Sciortino, 2021). In Mataloko, all four functions exhibit severe dysfunction simultaneously, creating systemic collapse rather than manageable isolated problems. Adaptation failures prevent effective goal attainment, producing harm instead of welfare. Goal attainment contradictions delegitimize the system, making integration impossible as affected populations rationally refuse coordination with systems harming them. Integration prevents adaptation failures because necessary feedback and learning mechanisms depend on trust-based information flows destroyed by manipulation and exclusion. Latency crisis means that even if technical and procedural problems were resolved, fundamental value incompatibilities would remain, preventing long-term system stability. This systemic analysis explains why conventional mediation approaches addressing isolated dimensions through technical fixes, compensation payments, or procedural consultations cannot resolve the conflict, as effective responses simultaneously addressing all four functional dimensions through approaches fundamentally transforming system operation rather than incrementally adjusting existing parameters.

3.5 Mediation failure analysis: Structural independence deficit

Mediation theoretically serves as reintegrative mechanism restoring system equilibrium through negotiating conflicting interests (van Assche et al., 2022). However, documented mediation attempts in Mataloko encountered fundamental structural obstacles that undermined their effectiveness and deepened rather than resolved the conflict. Governor Melki Laka Lena's April 4, 2025 closed meeting with Archbishop Budi initially appeared accommodative by expressing support for development postponement. Yet the subsequent Provincial Government request for Archdiocese to send four representatives to join a Geothermal Development Problem Resolution Team also involving

PLN and developers (Nuka, 2025) revealed critical structural flaws. This design violated fundamental mediation principles requiring neutral facilitation by creating forums including parties with direct interests in outcomes. In Parsonian perspective, mediators must occupy neutral positions within systems to effectively perform integrative functions, as mediator contamination by party interests destroys legitimacy and prevents optimal integration (Sciortino, 2021; van Assche et al., 2022). The Archdiocese's rejection via Diocesan Secretary Rev. Damianus Dionisius Nuwa's letter, arguing investigative teams must remain genuinely independent by excluding implementing or opposing parties (Nuka, 2025), reflected sophisticated understanding that structural independence enables effective conflict transformation rather than legitimizing predetermined outcomes.

True independence encompasses three essential dimensions that the Mataloko mediation design comprehensively failed (Nafis, 2020; Febriana, 2025). Personal composition independence requires teams of academics and independent experts without financial, political, or professional ties to conflicting parties, which the proposed Resolution Team including PLN and developers violated. Funding independence requires investigation and mediation processes funded through mechanisms preventing any conflicting party from exercising financial leverage over outcomes, as developer or implementing agency funding creates structural incentives favoring findings that minimize liability and justify project continuation. Mandate independence requires terms of reference established through processes ensuring all parties have equal influence over what questions are investigated and what outcomes are possible, as mandates predetermined by implementing agencies typically constrain investigations to narrow technical questions while excluding fundamental issues like project viability or rights to refuse development. The failure across all three dimensions explains both community and Church rejection of the proposed mediation framework.

JATAM's Melky Nahar articulated this structural critique by stating the Governor need not form sampling teams since field facts sufficiently demonstrate damage, urging instead total operation cessation, independent forensic audits, legal enforcement, and full ecosystem restoration with compensation (Nuka, 2025). This intervention highlights critical distinctions between superficial mediation focused on procedural compromise and transformative mediation addressing structural causes of conflict (Bush & Folger, 1994). Superficial mediation assumes conflicts stem from misunderstandings resolvable through dialogue facilitating compromise between equally valid perspectives, treating all stakeholder positions as legitimate interests requiring balance. Transformative mediation recognizes that conflicts often stem from structural injustices, power asymmetries, and rights violations requiring fundamental transformation of relationships and power redistribution rather than mere compromise. In Mataloko, documented harms including environmental contamination, health impacts, and cultural dispossession constitute rights violations rather than competing interests, making compromise between profit motives and rights to health and cultural survival fundamentally inappropriate.

Clayton & Dorussen (2021) demonstrate that mediation effectiveness increases when combined with substantive transformative action that actively transforms conflict contexts. In Mataloko, government mediation lacks such substantive action across multiple critical dimensions. Operations continue without cessation despite documented harm, with drilling, water extraction, and expansion plans proceeding toward 2031 targets (Brilian et al., 2024; Seo, 2025). No genuine independent audits exist, as the Governor's Task Force cannot qualify as independent when government itself is implementing party. No violation enforcement has occurred despite AMDAL documentation discrepancies constituting legal violations (Taris & Rastika, 2025; Nuka, 2025). CSR programs do not constitute comprehensive compensation addressing material losses, immaterial damages, and ongoing harm from continued operations (Nuka, 2025). No ecosystem restoration has been initiated, with steam vents, water contamination, and land degradation continuing unaddressed (Floresa, 2025; Nuka, 2025). Without these substantive actions, mediation becomes performative theater creating appearance of response without addressing root

problems, reinforcing community perceptions that state prioritizes project continuation over citizen protection and thereby deepening rather than resolving the conflict.

3.6 Practical framework for environmental conflict mediation

This framework synthesizes lessons from the Mataloko case into seven integrated principles for effective environmental conflict mediation in contexts involving religious institutions, indigenous rights, and resource extraction.

Structural independence in mediation forum design requires complete independence from all conflicting parties across personal composition, funding sources, and operational mandates. Mediation teams must comprise exclusively academics, technical experts, and facilitators without financial, political, or professional ties to government, developers, or advocacy organizations, with funding secured through international organizations, academic institutions, or escrow arrangements preventing financial leverage by conflicting parties. Terms of reference must be established through processes giving all parties equal influence over investigation scope, methodologies, and possible outcomes, with all proceedings conducted transparently through public access to documents and findings. When NTT Provincial Government formed a Resolution Team involving PLN and developers alongside community representatives (Nuka, 2025), structural compromise was immediate. Genuine independence requires external expert teams funded independently with mandates co-created by all stakeholders including communities and Church.

Comprehensive independent forensic audit requires transformative mediation through rigorous scientific investigation of ecological, social, health, and economic impacts. This encompasses scientific measurement of water quality, soil contamination, gas composition from geothermal manifestations, biodiversity impacts, and ecosystem service valuation; population health studies identifying prevalence of hydrogen sulfide exposure symptoms with comparison to control populations and long-term monitoring protocols; documentation of agricultural productivity changes, livelihood disruption, housing damage, and economic losses with assessment of CSR program adequacy; documentation of impacts on sacred sites, traditional practices, and intergenerational cultural transmission using participatory methodologies respecting indigenous knowledge protocols; and open publication of audit results serving as basis for proportional sanctions, compensation calculations, and restoration program design. Melky Nahar's critique that superficial sampling is inadequate (Nuka, 2025) is well-founded, as comprehensive audit would scientifically document water quality changes in Wae Mosa and Wae Kusi springs, hydrogen sulfide concentrations at various distances from steam vents, prevalence of respiratory and skin disorders in Turetogo Village compared to control villages, agricultural productivity losses, and cultural impacts on mata uma sites (Nuka, 2025; Floresa, 2025).

Recognition of local cosmology and indigenous rights requires mediation frameworks to integrate substantive recognition of local value systems as epistemological foundations equal to technical-scientific knowledge. This includes facilitating structured conversations enabling local knowledge about agricultural cycles, water flow patterns, sacred sites, and traditional ecological indicators to integrate into project feasibility assessments on equal footing with technical data; treating concepts like mori watu mori tana and mata uma not as cultural beliefs subordinate to economic rationality but as knowledge systems with ecological and social validity; implementing genuine FPIC consistent with UN Declaration on the Rights of Indigenous Peoples (2007), including rights to refuse development; and recognizing that indigenous communities have rights to protect sacred sites and ancestral lands even when development promises economic benefits. Maria Baka's willingness to die or live on ancestral land and Dominikus Losa's defense of mata uma (Nuka, 2025) must be understood not as irrationality but as cosmological bonds having socio-ecological functions maintaining community sustainability. Practical implementation includes incorporating indigenous knowledge holders as equal experts in assessment teams, conducting cultural mapping identifying sacred sites and spiritually significant landscapes, establishing protocols for integrating oral traditional knowledge with written technical documentation,

and creating legal mechanisms recognizing ancestral land tenure systems alongside state ownership frameworks.

Crisis communication based on full accountability requires that where projects have caused tangible negative impacts, strategies must be based on full acknowledgment and substantive corrective action rather than defensive postures. This encompasses full public apology where organizations acknowledge specific failures causing documented harm and accept responsibility (Wang & Li, 2024); substantive corrective action including immediate cessation of all harm-causing activities, particularly drilling triggering new geothermal manifestations and water extraction reducing irrigation capacity, addressing underlying problems such as geological unsuitability rather than attempting larger-scale versions of failed approaches, and implementing reclamation programs based on local ecological knowledge with community participation; comprehensive compensation including full restitution for housing damage, agricultural land degradation, productive asset losses, economic opportunity costs, psychosocial stress, socio-cultural disruption, and loss of sense of place, with compensation being restorative rather than transactional; healthcare infrastructure upgrades addressing long-term health impacts from toxic gas exposure; and transparent information including honest disclosure of all project impacts, failures, and risks with correction of previous misinformation. PT PLN and government must publicly acknowledge that 27 years of technical failures (Ahmad et al., 2022; Seo, 2025; Taris & Rastika, 2025) demonstrate geological unsuitability, that operations caused documented environmental damage and health impacts (Nuka, 2025; Floresa, 2025), and that AMDAL documentation discrepancies constituted information manipulation (Taris & Rastika, 2025; Nuka, 2025).

Participatory oversight mechanisms require mediation to produce institutional structures ensuring community involvement in every decision-making stage related to development potentially impacting their environment. This includes establishing permanent councils with legal authority to access project information, conduct field inspections, and provide binding recommendations on project modifications or cessation; ensuring council composition includes affected groups such as women, farmers, and traditional leaders with technical support from academics and environmental NGOs, preventing elite capture through explicit inclusion quotas; providing public legal education about environmental rights, complaint procedures, and access to justice; training community members in environmental monitoring, impact documentation, and advocacy strategies; and educating communities about manipulative tactics like guerrilla socialization experienced in Mataloko (Taris & Rastika, 2025; Nuka, 2025). Many residents did not understand that AMDAL document-implementation discrepancies constitute legal violations subject to challenge (Taris & Rastika, 2025; Nuka, 2025), whereas environmental legal literacy would enable communities to hold developers accountable and permanent oversight councils could have detected water extraction from undisclosed locations before extensive damage occurred.

Gender justice and vulnerable group protection requires environmental conflicts to address differential impacts based on gender, age, and socio-economic status through explicit protection mechanisms. This includes documenting how women, children, elderly, and persons with disabilities experience specific project impacts such as women bearing disproportionate burdens in water contamination contexts due to household water management responsibilities; designing inclusive participation through separate focus group discussions for women, local language use, meeting scheduling considering women's domestic workloads, and childcare provision; designing programs addressing vulnerable groups' specific needs including maternal health improvement and pediatric care addressing long-term health impacts from pollutant exposure; and implementing robust safeguards against threats experienced by environmental activists with attention to gendered dimensions of intimidation. Narratives from Maria Baka, 64-year-old housewife, and Esi Daku, 70 years old, showing mud sediment in bathing facilities (Nuka, 2025) indicate elderly women experience additional water contamination burdens that mediation

must explicitly address, while violence threats against priests and advocates (Nuka, 2025) require protection mechanisms with gendered analysis.

Systemic learning and best practice dissemination requires conflicts to be systematically documented as learning opportunities preventing repetition through institutional memory and policy reform. This includes recording technical-administrative aspects alongside socio-political and cultural dynamics influencing conflict trajectories; developing preventive policies including moratoriums on new geothermal projects in areas with similar geological characteristics, strengthened AMDAL regulations with strict sanction enforcement against information manipulation, mandatory social-ecological impact assessments involving community participation from earliest planning stages, and legal requirements for genuine FPIC with rights to refuse development; establishing systems ensuring past mistakes are not repeated, as Nahar's criticism of government irresponsibility in reactivating demonstrably failed projects (Nuka, 2025) highlights absence of such mechanisms; documenting the Catholic Church's structural support for community resistance through Pastoral Letters, Advocacy Team formation, and prophetic witness rooted in Laudato Si' teachings (Nuka, 2025) as models for religious institutions functioning as countervailing power; and disseminating through academic publications, policy briefs, training modules, public awareness campaigns, and university curricula integration. The case's international attention through Vivat International's UN Human Rights Council reports (Taris & Rastika, 2025) demonstrates local conflicts have global relevance for international norms and standards, while the Governor's Task Force recommendation to redirect Mataloko toward Ngada Regency Geopark development (Floresa, 2025) represents an alternative development pathway meriting analysis as potential model.

The seven frameworks may be conceptualized as the Mataloko Flower (Puspa Mataloko), metaphorically illustrated through seven petals, wherein each petal represents a distinct dimension or phase of mediation in the Mataloko geothermal environmental conflict, as depicted in the following illustration :

Fig. 1. Puspa Mataloko (Mataloko flower)

These seven principles are interdependent and must be implemented holistically through phased implementation. Initial phases immediately establish structural independence through external expert mediation teams, implement cessation of harm-

causing activities, and initiate full public accountability acknowledgment. Subsequent phases within three to six months conduct comprehensive forensic audits using participatory methodologies integrating indigenous knowledge, design comprehensive compensation and ecosystem restoration programs with community co-creation, and establish permanent participatory oversight mechanisms. Medium-term phases within six to eighteen months implement ecosystem restoration and compensation programs, build institutional capacity through legal empowerment and environmental literacy programs, and develop gender-responsive support services for vulnerable groups. Long-term phases beyond eighteen months conduct systemic learning documentation, reform policies incorporating lessons learned, disseminate best practices through multiple channels, and establish monitoring and evaluation systems for long-term sustainability.

4. Conclusion

This research analyzed the Mataloko Geothermal Power Plant conflict through integrated application of Johan Galtung's conflict theory, Timothy Coombs' Situational Crisis Communication Theory, and Talcott Parsons' structural-functional framework, revealing three primary findings. First, the conflict stems from fundamental structural contradictions rather than communication failures or misunderstandings. Galtung's ABC analysis revealed contradictions including geological unsuitability evidenced through 27 years of technical failures, ontological incompatibilities between state land ownership concepts and indigenous mori watu mori tana cosmology, and power asymmetries structuring all stakeholder interactions. These contradictions generated mutually exclusive stakeholder attitudes and escalating confrontational behaviors including violence threats against environmental advocates. Second, government and developer communication strategies fundamentally mismatched crisis characteristics. SCCT analysis demonstrated that Mataloko constitutes a high-responsibility crisis combining organizational misdeeds with injuries and human breakdown accidents, requiring highly accommodative responses including full apology and substantive corrective action. However, actual strategies employed defensive and ingratiation approaches including transparency claims, CSR programs, and procedural consultations that are inappropriate for crisis responsibility levels. This strategy-responsibility mismatch exacerbated reputational damage and intensified opposition. Third, systemic dysfunctions across all four AGIL dimensions explain why conventional mediation failed. Adaptation failures to geological and cultural conditions prevented effective goal attainment, producing harm instead of welfare. Goal contradictions delegitimized the system, making integration impossible as affected populations rationally refused coordination with systems harming them. Latency crisis reflected fundamental value incompatibilities between instrumentalist development paradigms and Flores cosmology emphasizing sacred ancestral relationships. These interdependent dysfunctions created systemic collapse requiring transformative rather than incremental responses.

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