

Framing Conflict and Environmental Justice in Online Media Coverage of the Ulumbu-Poco Leok and Mataloko Geothermal Projects in East Nusa Tenggara

DEDI PALAMEA

ABSTRACT

Geothermal development in Flores is promoted as part of the energy transition, yet at the local level it has generated conflicts over land, water, livelihoods, participation, and recognition of Indigenous communities. This study examines how local online media in East Nusa Tenggara frame conflict and environmental justice in reporting on the Ulumbu-Poco Leok and Mataloko geothermal projects. It employs a qualitative descriptive-analytical approach with a comparative case-study design. The corpus comprises 24 event-based news articles published by seven media outlets between 1 January 2025 and 31 July 2026. The articles were analyzed using Entman's four framing functions, Schlosberg's three dimensions of environmental justice, and additional attention to source access and content origin. The findings identify two dominant framing packages. Fourteen articles (58.3%) foreground a rights-ecology frame, while seven articles (29.2%) prioritize a technocratic-development frame. The remaining three emphasize political mediation, project-related economic conflict, and episodic dramatization. Ulumbu-Poco Leok is primarily framed as a conflict over legitimacy, land rights, and consent procedures, whereas Mataloko is framed through lived impacts, technical risk, water, agriculture, and health. The study concludes that geothermal conflict is not simply a pro-con debate over renewable energy, but a contest over definitions of progress, the distribution of benefits and risks, the quality of participation, and recognition of local identities and knowledge.

Keywords: *Media framing; Geothermal energy; Conflict; Environmental justice; East Nusa Tenggara*

Dedi Palamea is a postgraduate student in the Department of Sociology, Universitas Nasional, Jakarta, Indonesia. His research interests include environmental sociology, media framing, environmental justice, and socio-ecological conflicts, particularly geothermal development and local communities. Email: dedipalamea@gmail.com

INTRODUCTION

As a low-carbon energy source whose production is globally being promoted for expansion (IEA 2024; IRENA 2021), geothermal energy has become a priority in Indonesia. There is a gap between the country's resource potential and its utilized capacity, with an estimated potential of approximately 23.6 gigawatts (GW), while installed capacity in 2024 was approximately 2.6 GW (ESDM 2024). The 2025 - 2034 Electricity Supply Business Plan (RUPTL) mandates the addition of 5.2 GW of geothermal power generation capacity (ESDM 2025). Minister of Energy and Mineral Resources Decree No. 2268 K/30/MEM/2017 also designated Flores as a "Geothermal Island," making it one of the spaces through which the national agenda is translated into practice (ESDM 2017). The Indonesian government, through PT Perusahaan Listrik Negara (PLN), is developing geothermal energy on Flores Island, particularly in the Ulumbu-Poco Leok and Mataloko areas.

The geothermal development process has generated both positive and negative responses from stakeholders, particularly affected local communities. The conflicts that have emerged represent the contestation between groups supporting and opposing the project's social feasibility. This contestation demonstrates that geothermal conflicts cannot be reduced to a simple opposition between supporters and opponents of clean energy. Yeh, et al. (2025) demonstrate how the Manggarai community conceptualizes living space as an interconnected whole comprising homes, gardens, water sources, ritual sites, community, and relationships with ancestors when responding to geothermal projects. In Ulumbu-Poco Leok, Anggelli and Situmorang (2024) highlight the polarization of media information concerning project expansion, while Soli, et al. (2025) identify a contestation of narratives surrounding Mataloko on social media, involving the languages of energy transition, ecological impacts, participation, and policy legitimacy. These findings do not, in themselves, establish the truth or falsity of all actors' claims, but they demonstrate that the definition of the problem, the identification of responsible parties, and the choice of solutions are indeed contested. In other words, material conflict simultaneously becomes a conflict of representation.

The social construction perspective explains how environmental conditions acquire the status of public problems through the roles of claims, claim-makers, evidence, symbols, interests, and institutional support in the construction of environmental problems (Hannigan, 2022), while interpretations of environmental events take place through the media and discursive arenas (Hansen, 1991). Local online media constitute one of the arenas in which this definitional authority is contested. Through the selection of headlines, facts, sources, quotations, background information, and recommendations, the media do not merely transfer events into texts but organize reality into patterns that can be understood through framing (Entman, 1993). Unlike previous studies, such as the analysis of local community perceptions of geothermal energy in Palembang (Trisiah and de Vries, 2026), the framing analysis of geothermal energy in two national media outlets (Trisiah et al. 2022), the process of geothermal energy framing in Indonesia (Rahmawati 2025), the Mataloko narrative on social media (Soli et al. 2025), and the framing analysis of the local media outlets Flores.com and Pos Kupang.com based on eight news articles published in April 2025 (Barni, et al. 2026), this study aims to analyze how NTT

based online media frame conflicts and construct environmental justice in their coverage of geothermal energy development in Ulumbu-Poco Leok and Mataloko. It also seeks to explain the relationship between such framing and the representation of distributive, procedural, and recognition justice across cases and media outlets.

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Geothermal development is increasingly positioned within the global energy transition because of its potential as a low-carbon energy source (IEA, 2024; IRENA, 2021). In Indonesia, this agenda is reflected in the expansion of geothermal infrastructure, including the development of geothermal projects in Flores. However, the transition toward low-carbon energy does not necessarily eliminate social and environmental conflict. At the local level, geothermal development may intersect with land ownership, water resources, agricultural livelihoods, health, Indigenous rights, participation, and the recognition of local knowledge. Previous studies indicate that geothermal conflicts therefore cannot be understood solely as disputes between supporters and opponents of renewable energy, but also as struggles over legitimacy, risk, territorial authority, and the distribution of benefits and burdens.

From the perspective of the social construction of environmental problems, environmental conditions become public issues through processes of claim-making, interpretation, and institutional recognition. Hannigan (2006, 2022) argues that environmental problems are constructed through claims supported by actors, evidence, symbols, interests, and institutional resources. Media constitute an important arena in this process because they provide visibility to particular actors and interpretations. Environmental issues are consequently not only material conditions but also discursive constructions through which particular definitions of problems, causes, responsibilities, and solutions become more visible than others (Hansen, 1991). This perspective is particularly relevant to geothermal conflicts because different actors may construct the same project in substantially different ways. Government institutions, PLN, and technical experts may emphasize energy security, technological capacity, economic benefits, and risk mitigation, while affected communities, Indigenous groups, and environmental organizations may emphasize land, water, livelihoods, participation, environmental risks, and rights. These competing claims represent a struggle over the authority to define what constitutes the central problem and which forms of evidence and knowledge should be considered legitimate. To analyze this process, this study employs Entman's (1993) framing approach. Framing refers to the selection and salience of particular aspects of reality through which media promote a particular definition of a problem, diagnosis of its causes, moral evaluation, and recommendation for treatment. Framing therefore provides a useful analytical instrument for examining how geothermal conflicts are organized into meaningful narratives. The framework also recognizes that framing is related to broader processes of collective meaning construction (Benford & Snow, 2000), while the selection of sources can influence which perspectives obtain greater visibility in news discourse (Bennett, 1990; Mathisen, 2023).

The second major conceptual foundation is environmental justice. Schlosberg (2004) conceptualizes environmental justice through interconnected

dimensions of distribution, procedure, and recognition. Distributive justice concerns how benefits, costs, risks, and resources are distributed. In geothermal development, this includes electricity, employment, economic opportunities, land, water, environmental risks, health, and livelihood impacts. Procedural justice concerns access to information, participation, consultation, representation, consent, protest, and legal remedies. Recognition justice concerns whether the identities, experiences, cultural relations, and knowledge of affected communities are treated as legitimate. Jenkins et al. (2016) further emphasize that the transition to clean energy cannot be considered just merely because it produces environmental benefits; the processes through which energy decisions are made and the groups affected by them must also be considered.

This framework is important because low-carbon energy development may reproduce existing inequalities or generate new forms of vulnerability. Carley and Konisky (2020) show that the clean-energy transition may involve unequal distributions of benefits and burdens, while Sovacool et al. (2019) highlight the possibility of new vulnerabilities when distributive and procedural dimensions are overlooked. In geothermal development, Greiner et al. (2023) similarly demonstrate the importance of examining whether local communities primarily bear the costs of projects while benefits are distributed more broadly. Thus, the designation of geothermal energy as “clean” does not by itself resolve questions of justice, legitimacy, or social acceptance. Previous studies have examined geothermal narratives in Indonesia, including media framing of geothermal energy (Trisiah et al., 2022; Rahmawati, 2025), information and polarization surrounding Ulumbu-Poco Leok (Tefbana & Situmorang, 2024), narratives concerning Mataloko (Soli et al., 2025), and local perceptions of geothermal development (Trisiah & de Vries, 2026). Barni et al. (2026) also examined framing in Floresa.co and Pos-Kupang.com. Nevertheless, comparatively limited attention has been given to how multiple NTT-based online media construct geothermal conflict across the Ulumbu-Poco Leok and Mataloko cases while simultaneously representing environmental justice. Existing studies tend to focus on particular media, individual cases, social media narratives, or perceptions, rather than connecting media framing with source access and the three dimensions of environmental justice. This study addresses this gap by integrating media framing, social construction of environmental problems, source access, and environmental justice into a comparative analytical framework. The framework assumes that geothermal conflict emerges from competing claims concerning energy development and local socio-ecological conditions. These claims enter the media arena through different actors and sources and are subsequently selected and organized through framing. The resulting frames can then be examined in relation to distributive, procedural, and recognition dimensions of environmental justice.

The study does not assume that one media frame is inherently more valid than another. Instead, it examines how different media organize competing claims, which actors receive greater discursive access, what forms of evidence are emphasized, and which dimensions of environmental justice become visible or marginalized. The comparison between Ulumbu-Poco Leok and Mataloko is particularly important because the two cases represent different configurations of conflict. Ulumbu-Poco Leok is primarily associated with questions of legitimacy, territorial authority, consent, and participation in relation to project expansion,

whereas Mataloko is more strongly represented through lived or perceived impacts involving land, water, agriculture, health, safety, and remediation.

Accordingly, the conceptual framework positions media not merely as channels for transmitting information but as arenas in which competing definitions of geothermal development and environmental justice are constructed and contested. The integration of Entman's framing functions with Schlosberg's dimensions of environmental justice enables this study to examine not only how geothermal conflicts are framed, but also which forms of justice are made visible through those frames. This provides the theoretical basis for comparing how NTT based online media represent the conflicts surrounding Ulumbu-Poco Leok and Mataloko.

METHOD

A qualitative approach with a comparative case study strategy and descriptive-analytical analysis was applied because it is appropriate to the issues and objectives of this study. According to Aspers and Corte (2019), a qualitative approach is used when research involves a series of iterative processes between concepts, theories, evidence, and empirical materials to achieve conceptual distinctions and a deeper understanding of the phenomenon under investigation. Furthermore, Goodrick (2014) argues that comparative studies are used to analyze and synthesize similarities, differences, and framing patterns across two or more cases that address similar issues. Meanwhile, Yin (2018) argues that in a case study design, case selection is not based on statistical logic but on replication logic. This means that each case is treated as an independent empirical unit, allowing each pattern to be examined logically. Regarding descriptive-interpretive analysis, Sandelowski (2010) states that it is used to provide a comprehensive description while remaining close to the textual data, and subsequently to interpret the patterns, relationships, and meanings embedded within it. Thus, the analysis does not stop at a surface-level description of the text.

This study focuses on NTT based online media that published news relevant to the main research issues. News articles were collected through online media archives and cross-searches using location-based keywords and the terms "Ulumbu-Poco Leok geothermal" and "Mataloko geothermal," covering publications from January 1, 2025, to July 31, 2026, across several NTT based online media outlets, namely Flores, Ekora NTT, Vox NTT, Flores Pos, Victory News, NTT Zoom, and NTT Media Express. Articles were selected purposively and stratified according to media outlet, case, subgenre, and content-origin traces. The researchers conducted a systematic search and calculated the number of relevant articles, resulting in a composition of 11 articles on Ulumbu-Poco Leok geothermal energy, 9 articles on Mataloko geothermal energy, and 4 cross-case articles, as shown in the following graph.

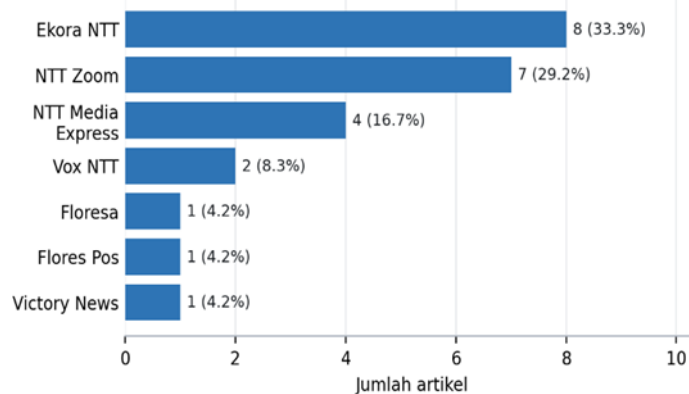


Figure 1. Distribution of Core Articles by Media Platform

Each case was first analyzed using a common coding framework, followed by a cross-case synthesis to identify convergences, divergences, and recurring framing patterns while preserving the contextual integrity of each case (Yin 2018). Robert N. Entman's framing analysis model was then applied, focusing on four core dimensions: problem definition, causal interpretation, moral evaluation, and recommendations for addressing the problem (Entman 1993). The deductive coding categories were complemented by inductively generated codes capturing salient terms, metaphors, and interpretive meaning packages that emerged from the corpus. This approach reflects the principle that a coding framework should provide sufficient analytical direction while remaining responsive to the empirical material (Schreier 2012).

News coverage was conceptualized not as a neutral mirror of events, but as a discursive arena in which meanings are selectively constructed and made salient (Hsieh and Shannon 2005). The findings were subsequently interpreted through the complementary lenses of distributive, procedural, and recognition justice. This analytical framework enabled an examination of how the distribution of benefits and risks, participation in decision-making processes, and issues of identity, local knowledge, customary rights, and relationships with lived spaces were represented across the cases (Schlosberg 2004).

FINDINGS AND DISCUSSION

The geothermal projects in Ulumbu–Poco Leok and Mataloko remain contested both within local communities and in media discourse. Coverage by NTT based online media does not constitute a straightforward debate between supporters and opponents of renewable energy. Rather, reporting on the two cases reveals a more complex field of contestation in which geothermal development is simultaneously framed as energy-transition infrastructure, a source of economic benefits, a potential driver of ecological risks, a site of struggles over lived space, and a test of the legitimacy of development itself. In this context, the media play a significant role in transforming particular conditions into issues that become visible, intelligible, and subject to public evaluation, including issues of conflict and environmental justice surrounding geothermal development.

As a form of mass communication, the media perform functions of informing, educating, and influencing audiences, as described by Effendi (1993), cited in Putri and Yusian (2018). These functions are closely interconnected, as news coverage does not merely convey factual accounts of events but also provides interpretive explanations that shape public knowledge, direct attention, and influence how issues are evaluated. Romli (2024) defines online media as communication media based on telecommunications and multimedia technologies that utilize computers and the internet, encompassing news portals and other online media, websites and blogs, online television and radio, electronic mail, and social media platforms. Their interactive, rapid, timely, multimedia, and interconnected characteristics enable information to circulate widely, thereby amplifying the influence of editorial decisions over which issues, actors, and forms of knowledge receive public visibility.

According to Renoth, et al. (2023), media organizations can select particular sources and foreground specific understandings of benefits, risks, sources of conflict, and solutions considered legitimate. In the context of this study, NTT based online media have an interest in geothermal development projects insofar as they cover and disseminate online news about these projects, making information about their development accessible to relevant stakeholders and the broader public.

The Construction of Conflict and Environmental Justice in the Framing of NTT Based Online Media

Based on an analysis of 24 news articles published by seven NTT based online media outlets concerning geothermal development in Ulumbu - Poco Leok and Mataloko, the coverage addressed a range of topics and perspectives. Among the event-based news reports, 14 articles (58.3%) employed an ecological-rights framing, in which the conflict was defined in terms of threats to land, water, agriculture, health, customary rights, and the freedom to participate in decision-making. Seven articles (29.2%) adopted a technocratic-development framing, positioning geothermal energy as clean, reliable, affordable, job-creating, and instrumental to energy self-sufficiency. The remaining three articles (12.6%) focused on political mediation, project-related economic conflicts, and periodic dramatization, as illustrated in the following graph.

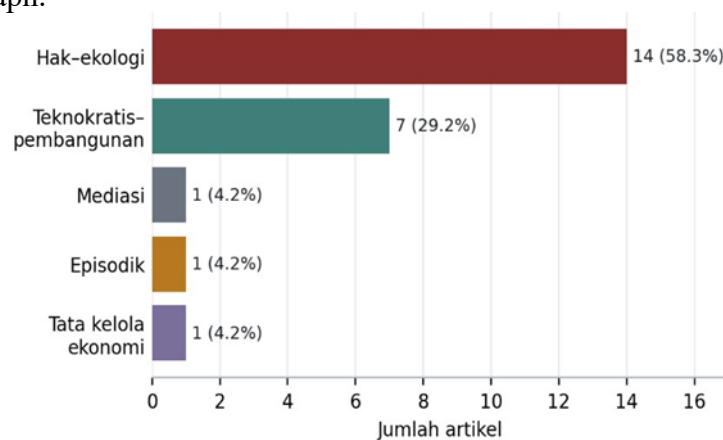


Figure 2. Distribution of the Number of Articles in Online Media

The foregoing findings indicate that rights–ecological framing predominates; however, this does not mean that all online media outlets reject geothermal development projects. Rather, the emergence of a technocratic framing in one media outlet demonstrates the relationship between the dominance of official sources and the way in which the media defines the problem. This finding is consistent with Entman’s (1993) and Bennett’s (1990) view that framing operates through the selection and salience of particular aspects of reality, while reliance on official sources may constrain the range of perspectives represented in news coverage. In this sense, polarization reflects competition among claim-makers.

Within the social construction of environmental problems, the success of a claim is determined not only by the magnitude of its impacts but also by the credibility of the speaker, the clarity of causal narratives, symbolic appeal, and the availability of arenas through which claims can reach the public (Hannigan, 2006; Benford & Snow, 2000). Government institutions, PLN, and project experts advance claims supported by figures concerning electricity capacity and demand. By contrast, residents, Indigenous communities, churches, and environmental organizations articulate claims through lived experiences, land-use changes, memories of past failures, the sacredness of land, the right to consent, and experiences of encounters with state authorities. Thus, differences in framing are not merely differences of opinion. Rather, they reflect a struggle over authority to determine which forms of evidence are considered legitimate and which consequences should be prioritized. This finding reinforces Hannigan’s argument that environmental problems possess both a material dimension and a social career as public claims (Hannigan, 2022).

Technocratic-developmental framing, in particular, resembles the logic of ecological modernization, in which economic development and ecological protection are understood as reconcilable through cleaner and more efficient technologies. In the context of geothermal development, the dual status of geothermal energy—as both development infrastructure and an ecological solution—generates contestation among local communities. Such contestation tends to be interpreted as a matter of information, mitigation, or technological quality. Examples of the legitimizing language surrounding the Ulumbu geothermal project can be found in the following news headlines: “Dialog dengan Warga Sekitar PLTP Ulumbu, Gubernur NTT: Orang NTT Patut Bangga dengan Geothermal” [Dialogue with Residents Around the Ulumbu Geothermal Power Plant, East Nusa Tenggara Governor: The People of NTT Should Be Proud of Geothermal], published by NTT Zoom on 20 July 2025 (NTT Zoom, 2025c); and “Apresiasi Dukungan Pemda, Ditjen EBTKE: Perluasan PLTP Ulumbu Sangat Diperlukan” [Appreciating Local Government Support, Directorate General of New, Renewable Energy and Energy Conservation: The Expansion of the Ulumbu Geothermal Power Plant Is Highly Necessary], published by NTT Zoom on 21 June 2025 (NTT Zoom, 2025d).

Both reports position the project as a necessity for the electricity system, a symbol of progress, and an element of regional identity. Risks are addressed through technology, monitoring, dialogue, and social programs, while the voices of opponents do not constitute the primary sources of the reporting (NTT Zoom, 2025c; 2025d). Statements that the expansion of the Ulumbu geothermal power plant is “highly necessary,” that “the people of NTT should be proud of geothermal,” and that development cannot rely solely on agriculture construct a symbolic hierarchy

between a modern future supported by clean energy and agrarian spaces of livelihood. However, this discourse does not in itself demonstrate that the project has achieved ecological modernization in practice. Rather, it raises the question of whether technological improvements genuinely reduce ecological and social burdens or merely redistribute risks from the broader energy system to communities located at the project site (Mol & Spaargaren, 2000). Furthermore, to examine how online media in NTT construct conflict and environmental justice in the context of geothermal development, the subsequent analysis focuses on the aspects selected and emphasized, the actors granted access as news sources, and the origins or narrative traces of the news coverage, as presented in Table 1 below.

Table 1. Framing Tendencies across Online Media Outlets

Media Outlet	Number of Articles	Dominant Frame	Source Access / Narrative Traces	Justice Dimension Evident
Floresa	1	Rights–ecological	WALHI/environmental community groups; critique of clean-energy claims	Risk distribution and recognition of residents' experiences
Ekora NTT	8	Rights–ecological; one case involving project-related economic conflict	Residents, Indigenous communities, advocacy groups, and legal rulings	Procedural, recognition, distributive, and restorative justice
Vox NTT	2	Rights–ecological / local knowledge	Activists, affected groups, and criticism of the Task Force (<i>Tim Satgas</i>)	Procedural justice and epistemic recognition
Flores Pos	1	Legal–rights–ecological	Church institutions and claimant communities	Three dimensions of environmental justice
Victory News	1	Episodic dramatization	Protest events and demonstrators' statements	Procedural justice is present, while structural dimensions of the conflict receive less emphasis
NTT Zoom	7	Technocratic–developmental	Government, PLN, legislators, and experts	Distributive benefits and claimed procedural justice
NTT Media Express	4	Rights–ecological; political mediation	Government, PLN, JATAM, and WALHI NTT	Distributive justice

Source : Data processed by the researcher, 2026.

Table 1 shows that the framing of geothermal conflict and environmental justice varies across media according to patterns of source access. Ekora NTT and NTT Zoom account for 15 articles (62.5%) but present contrasting frames. Ekora NTT predominantly features residents, Indigenous communities, advocacy groups, and legal decisions, framing the conflict as an ecological-rights issue involving procedural justice, recognition, risk distribution, and remediation. By contrast, NTT Zoom relies mainly on government officials, PLN, legislators, and experts, framing geothermal development as a technical and developmental necessity associated with electricity and economic benefits and emphasizing participatory procedures.

Floresa, Vox NTT, and Flores Pos similarly emphasize residents' experiences, local knowledge, legal considerations, and ecological protection, while Victory News tends to present the conflict episodically through demonstrations and protesters' statements. NTT Media Express provides a more diverse range of sources, including government and PLN alongside JATAM and WALHI NTT, although distributive justice remains the most visible dimension. Overall, these differences suggest that media framing is closely related to who is

given authority to define the problem: official sources tend to emphasize developmental benefits, whereas residents and advocacy groups foreground risk distribution, participation, and recognition of affected communities' experiences and knowledge.

Across media, problem definition represents the primary point of divergence. Media giving greater space to residents, environmental organizations, churches, and Indigenous communities tend to frame the issue as a matter of just development, rather than simply electricity supply. In contrast, coverage dominated by government, PLN, and project-related experts emphasizes increased generating capacity, public concerns requiring clarification, and risks manageable through technical measures. Accordingly, the rights-ecology frame attributes conflict to centralized decision-making, inadequate consent, unequal power, and neglected impacts, whereas the technocratic-development frame emphasizes insufficient information, natural conditions, electricity constraints, and coordination problems. Sources therefore function not only as providers of information but also as producers of causal interpretations. The two frames also differ in moral evaluation. The rights-ecology frame foregrounds affected residents and Indigenous communities, emphasizing precaution, dignity, freedom of expression, food sovereignty, and intergenerational justice. The technocratic-development frame foregrounds the state, local government, PLN, and experts, emphasizing progress, energy security, efficiency, regional development, and technological risk management. These contrasting evaluations correspond to different proposed responses: review, suspension, permit withdrawal, and remediation in the rights-ecology frame, versus project continuation, engagement, monitoring, compensation, and technological improvement in the technocratic-development frame.



Figure 1. Headline and Image Selection in the Ulumbu–Poco Leok and Mataloko Cases Ekora NTT, 4th Edition March 2025 & Flores, Edisi 18th Edition July 2025

Source access is closely related to media framing. Ekora NTT, Vox NTT, Flores, and Flores Pos more frequently foreground residents, Indigenous communities, environmental organizations, churches, and advocacy networks, while NTT Zoom relies more heavily on government, PLN, legislators, and experts to provide data, risk assessments, and solution-oriented narratives. Victory News emphasizes events and demonstrations, whereas NTT Media Express presents a combination of rights-based claims and political responses. Compared with national media, where government and industry actors dominate, NTT local media provide

greater space for local communities and advocacy groups, although source diversity varies across outlets. Thus, geographical proximity alone does not ensure diversity; access networks, production routines, and editorial decisions determine whose voices become visible (Mathisen, 2023; Trisiah et al., 2022). The concentration of technocratic framing in one outlet should be interpreted cautiously. Following Entman (1993), framing operates through the selection and salience of particular aspects of reality. Technical indicators such as capacity, water flow, project progress, and employment strengthen the development frame, whereas protest images, community testimonies, references to living space, intimidation, and sacred land reinforce the moral and symbolic dimensions of the rights-ecology frame. These are not simply facts versus emotions, but different ways of organizing evidence. One-sided positive framing may also generate perceptions of manipulation and intensify opposition (de Vries, 2017).

International geothermal coverage similarly tends to emphasize development and technological innovation, whereas the NTT context places greater emphasis on land, Indigenous rights, agriculture, and lived experience (Wolf et al., 2026). This supports the argument that geothermal sustainability is context-dependent and cannot be reduced to technical or geological considerations (Spijkerboer et al., 2022). The key sociological questions are therefore who determines project locations, whose knowledge is trusted, and who bears the consequences. From an environmental justice perspective, media framing reflects three interconnected dimensions: distributive justice concerning benefits, costs, resources, and risks; procedural justice concerning information, participation, consent, representation, and legal remedies; and recognition justice concerning Indigenous identity, local knowledge, cultural relations with land, and affected communities' experiences. Clean-energy benefits cannot substitute for fair procedures or adequate recognition (Jenkins et al., 2016). Media therefore not only report environmental justice conflicts but also influence which dimensions of justice become visible.

Divergence in Geothermal Conflict Frames: Ulumbu–Poco Leok and Mataloko

The two cases differ not only in themes but also in the logic through which conflict is constructed. The rights-ecology frame links land, water, lived impacts, Indigenous rights, and participation to demands for review, suspension, or remediation, while the technocratic-development frame connects electricity needs, technical evidence, and risk mitigation with conditional project continuation. Free, Prior and Informed Consent (FPIC) is particularly prominent in the rights-ecology framing of Ulumbu–Poco Leok.

The main distinction concerns the temporal orientation of conflict. Ulumbu–Poco Leok is predominantly framed as an anticipatory conflict, focusing on legitimacy, land access, consent, financing, and water use before further expansion. Mataloko is more strongly framed as a retrospective conflict, drawing on previous experiences involving environmental impacts, water, land, safety, relocation, and remediation. Thus, Ulumbu–Poco Leok centers on who has the authority to determine the project's future, whereas Mataloko emphasizes how past impacts are explained and who is responsible for protection and remediation.

Table 2. Comparison of Entman's Four Framing Functions in the Ulumbu–Poco Leok and Mataloko Cases

Entman's Framing Function	Ulumbu–Poco Leok	Mataloko	Key Difference
Problem Definition	Rights-ecology: Expansion is framed as a legitimacy crisis involving customary land, consent, freedom of protest, project financing, and water use. Technocratic-development: The problem is framed in terms of insufficient electricity supply, the need for reliable power generation, and low public trust.	Rights-ecology: Operation and development are framed as an unequal distribution of risks affecting land, water, agriculture, health, safety, and the sense of security. Technocratic-development: The problem is framed as public concerns and technical safety issues that need to be managed.	Legitimacy before expansion versus responsibility for experienced or perceived impacts.
Causal Diagnosis	Rights-ecology: Centralized decision-making, unequal consultation, disregard for opposition, and the exercise of official authority. Technocratic-development: Growing electricity demand, limited capacity in Ulumbu–Poco Leok, insufficient information, and suboptimal coordination.	Rights-ecology: Project activities, inadequate protection, and insufficient remediation. Technocratic-development: Surface manifestations are considered natural or seasonal, while risks are regarded as manageable through technology and monitoring.	Power asymmetry is more prominent in Ulumbu–Poco Leok, whereas contestation over causal explanations of impacts is more prominent in Mataloko.
Moral Evaluation	Rights-ecology: Decisions made without meaningful consent are considered unjust, while community resistance is presented as legitimate. Technocratic-development: Expansion is framed as serving the public interest and as justifiable when responsibly managed.	Rights-ecology: The imposition of risks on residents and the disregard of their experiences are framed as unjust. Technocratic-development: Experts and project managers are granted moral authority, and continuation is considered acceptable when risks are controlled and benefits are distributed.	The right to determine the future of the living space is contrasted with the right to safety, protection, and remediation.
Treatment Recommendation	Rights-ecology: Review or revoke decisions, suspend activities or financing, protect freedom of protest, implement Free, Prior and Informed Consent (FPIC) , and conduct independent assessments. Technocratic-development: Continue Units 5–6 with technological improvements, dialogue, water monitoring, and local benefits.	Rights-ecology: Conduct independent audits, protect land and water, restore or compensate for losses, and suspend activities if risks remain unresolved. Technocratic-development: Use barriers, detectors, water circulation systems, monitoring, compensation, and conditional continuation.	Ulumbu–Poco Leok emphasizes prevention and legitimacy , whereas Mataloko emphasizes correction, mitigation, and remediation.

Source: Data processed by the researcher, 2026.

The stage of project development shapes the types of claims that gain prominence. In Ulumbu–Poco Leok, the expansion of Units 5–6 makes site-designation documents, political support, KfW Development Bank financing, community meetings, court decisions, and the planned withdrawal of water from Tiwu Bala important forms of evidence. The rights-ecology frame uses these sources to highlight questions of legitimacy, whereas the technocratic-development frame emphasizes electricity demand and temporary water-use arrangements to demonstrate project feasibility. In Mataloko, the operational and development stages make surface manifestations, safety barriers, hydrogen sulfide detectors, water measurements, construction progress, and residents' experiences more prominent. This difference in project stages helps explain why legal and procedural evidence is more prominent in Ulumbu–Poco Leok, while material and technical evidence is

more prominent in Mataloko. The socio-ecological context also shapes the direction of media framing. In Ulumbu–Poco Leok, land, gardens, water sources, ritual sites, inter-gendang relationships, and ancestral ties are constructed as an integrated living space. Yeh et al. (2026) show that living space in Flores connects homes, gardens, water, ritual sites, communities, and ancestors; therefore, land cannot be assessed solely in terms of area and compensation. In Mataloko, socio-ecological relations are more often represented through residents' experiences of living near the operational area, land and water use, agriculture, health, and safety. Both contexts are material and cultural, but Ulumbu–Poco Leok places greater emphasis on collective authority over territory, whereas Mataloko emphasizes lived experiences, livelihoods, and an environment that has changed or is perceived as risky.

Actor and power configurations also produce different conflict structures. In Ulumbu–Poco Leok, Indigenous communities appear as political collectives confronting local government, PLN, financing institutions, authorities, and public officials. Protests, refusals to attend meetings, legal challenges, and court decisions reposition residents from recipients of project socialization to rights-holders demanding decision-making authority. In Mataloko, residents are more often represented as affected communities confronting PLN, technical experts, regulators, and contractors. Economic disputes involving local businesses and debt also reveal inequalities within the project's benefit chain. This does not mean that Mataloko lacks rights-based politics; rather, its coverage more frequently emphasizes protection, causal explanation, compensation, and remediation than the authority to accept or reject the project at an early stage.

Evidence and epistemic authority constitute another arena of contestation in both cases. In Ulumbu–Poco Leok, official decrees, project status, court decisions, customary claims, community actions, water-flow data, and electricity demand are mobilized to support competing narratives. In Mataloko, surface manifestations, testimonies concerning odors and water, changes in agriculture, expert measurements, construction progress, safety barriers, detectors, and water-circulation systems become important sources of legitimacy. Technical figures make risks appear measurable, while testimonies and visual evidence make impacts socially tangible. However, technical figures do not automatically account for seasonal variation, resource use, or public trust; conversely, lived experiences alone do not establish technical causality.

Legal and policy contexts further reinforce these differences. The Ulumbu–Poco Leok conflict is connected to site-designation decrees, national policy status, ministerial decisions, financing, freedom of protest, and demands for Free, Prior and Informed Consent (FPIC). Legal processes are used to scrutinize official actions and policy foundations before project expansion gains broader social acceptance. In Mataloko, law and policy appear more often through safety requirements, environmental monitoring, land acquisition or compensation, water protection, and responsibilities for remediation. Thus, legality in Ulumbu–Poco Leok is primarily contested as a basis of authority and decision-making procedures, whereas in Mataloko it is more closely associated with protection standards, compliance, and accountability for impacts.

These contexts help explain why experiences from Mataloko function as a warning memory in reporting on Ulumbu–Poco Leok. Previously observed or experienced impacts in Mataloko are used to anticipate the potential consequences of expansion in Ulumbu–Poco Leok. Retrospective conflict therefore provides diagnoses and moral evaluations for anticipatory conflict. Conversely, Ulumbu–Poco Leok extends the lessons from Mataloko beyond technical safety toward questions of consent, policy legality, financing, and Indigenous authority.

All three dimensions of environmental justice are present in both cases, but with different emphases. Distributive justice concerns the allocation of benefits, costs, and risks; procedural justice concerns access to information, voice, and influence in decision-making; and recognition justice concerns whether the identities, rights, experiences, and knowledge of affected groups are treated equally (Schlosberg, 2004; Jenkins et al., 2016). In this study, remediation is understood as intersecting distribution and procedure because it involves what should be restored, who determines its adequacy, and how outcomes are monitored. Epistemic justice is situated within recognition because it concerns the status of local knowledge and residents' experiences as legitimate forms of knowledge.

From a distributive justice perspective, Ulumbu–Poco Leok reflects a tension between system-wide energy benefits and still-anticipatory local risks. Technocratic reports emphasize additional generating capacity, low-carbon energy, employment, social programs, and regional pride, while rights-ecology reports highlight potential land loss, water disruption, agricultural change, social burdens, and uncertainty concentrated within host communities. In Mataloko, distribution is expressed more concretely through experiences involving productive land, water, health, safety, relocation, compensation, and local business debt. Thus, Ulumbu–Poco Leok primarily raises the question of how to prevent unequal risk distribution, whereas Mataloko focuses more on how experienced or anticipated burdens should be assessed, corrected, and remediated. This demonstrates that low-carbon technologies may still create both beneficiaries and groups bearing disproportionate costs (Carley & Konisky, 2020; Sovacool et al., 2019; Greiner et al., 2023).

Regarding procedural justice, Ulumbu–Poco Leok more strongly emphasizes the quality of decision-making before and during expansion. Site designation, community meetings, financing, the composition of the task force, freedom of demonstration, access to information, FPIC, and legal challenges become indicators of whether participation is merely formal or can actually influence decisions. The rights-ecology frame views procedures as unjust when objections are heard without the ability to affect outcomes, whereas the technocratic frame treats dialogue, socialization, and monitoring as mechanisms for improvement. In Mataloko, procedural issues involve opportunities to submit complaints, access measurement results, the participation of residents and women in assessments, compensation decisions, audits, and remediation monitoring. Thus, Ulumbu–Poco Leok emphasizes the right to influence decisions before they are made, while Mataloko emphasizes the right to scrutinize, correct, and obtain remediation after risks emerge.

In terms of recognition justice, Ulumbu–Poco Leok represents Indigenous communities as collective subjects with historical, social, and spiritual relationships to their territory. Recognition therefore requires that they not be reduced to

landowners, compensation recipients, or targets of project socialization. In Mataloko, recognition is more closely associated with the credibility of residents' experiences concerning odors, water, health, agriculture, housing, and safety. When such concerns are explained solely as a lack of information, lived experience may be subordinated to formal expertise. Conversely, treating every observed manifestation as necessarily caused by the project may overlook technical uncertainty. Epistemic justice therefore requires media to distinguish between claims, measurements, uncertainty, and lived experience without rendering any one of them invisible.

Vargas-Payera et al. (2020) further explain that perceptions of geothermal development are shaped by patterns of engagement, project experiences, and local social contexts. Consequently, technological assurances do not automatically erase memories of impacts in Mataloko or distrust in Ulumbu–Poco Leok. Özen (2024) similarly shows that the “clean energy” label may obscure power relations, inequalities, and localized impacts. In Indonesia, Susilowati et al. (2026) identify tensions between supportive narratives emphasizing climate mitigation and grassroots narratives connecting energy development with human, ecological, cultural, economic, and spiritual relations. Recognition is therefore not merely symbolic; it is a condition through which technical benefits can acquire broader social legitimacy.

CONCLUSION

Analysis of the 24 articles shows that NTT online media do not present geothermal development as a phenomenon with a single meaning. Two dominant framing packages organize the conflicts: rights-ecology framing, found in 14 articles (58.3%), and technocratic-development framing, found in seven articles (29.2%). The remaining three articles focus on political mediation, project-related economic conflict, or episodic dramatization. Through Entman's four framing functions, the first package defines geothermal development as a threat to land, water, agriculture, health, customary rights, and participation, while the second frames it as a response to electricity needs, clean energy, job creation, and regional progress.

The comparison reveals distinct but interconnected configurations of injustice. Ulumbu–Poco Leok is primarily constructed as a legitimacy conflict preceding potential impacts, whereas Mataloko is more strongly constructed through material experiences and memories of impacts. In terms of environmental justice, Ulumbu–Poco Leok foregrounds procedural and recognition dimensions, while Mataloko places greater emphasis on the distributive dimension, without excluding the other two. The relationship between the cases indicates that experiences in Mataloko function as a warning memory in assessing risks in Ulumbu–Poco Leok, while the Ulumbu–Poco Leok conflict broadens the debate from technology to community rights to determine the future of their living space.

The theoretical contribution of this study lies in developing a layered interpretive model that connects media framing with environmental sociology. First, material conditions become public problems through competition among environmental claims. Second, the media select and amplify these claims through problem definition, causal diagnosis, moral evaluation, and treatment recommendations. Third, source access and the origins of news production shape the likelihood that particular claims gain visibility. Fourth, the social consequences of

such selection can be assessed through the dimensions of distribution, procedure, and recognition. This synthesis brings together the social construction of environmental problems, risk society and the politics of knowledge, the journalistic field, ecological modernization, and environmental justice.

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