



EFFECTIVENESS OF NON-LITIGATION ENVIRONMENTAL DISPUTE RESOLUTION IN INDONESIA'S COASTAL AND MARINE AREAS: TOWARD A PRELIMINARY CONCEPTUAL FRAMEWORK

EFEKTIVITAS PENYELESAIAN SENGKETA LINGKUNGAN HIDUP NON-LITIGASI DI WILAYAH PESISIR DAN LAUT INDONESIA: MENUJU SEBUAH KERANGKA KONSEP AWAL

Muhammad Nur Hussein Wahyudin^{1*}, Agus Satory¹, Eka Ardianto Iskandar¹, M. Mahipal^{1,2}, Muhammad Yusuf Wahyudin³, Muhammad Arsjad Yusuf⁴, Yudi Wahyudin³

¹Graduated School Universitas Pakuan, Bogor, Indonesia

²Faculty of Law Universitas Pakuan, Bogor, Indonesia

³Faculty of Agriculture Universitas Djuanda, Bogor, Indonesia

⁴Faculty of Law Universitas Djuanda, Bogor, Indonesia

*Correspondent author: muhammadnurhusseinwahyudin@gmail.com (MNH Wahyudin)

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ABSTRACT. *Environmental disputes in Indonesia's coastal and marine areas have become increasingly complex due to the interaction of ecological, social, economic, and governance dimensions. While litigation remains an available legal mechanism, non-litigation environmental dispute resolution has gained greater attention because of its flexibility, participatory nature, and potential to facilitate environmental restoration. However, the effectiveness of non-litigation mechanisms remains influenced by various supporting and constraining factors that have not been comprehensively integrated into a single analytical framework, particularly in the context of coastal and marine environments. This study aims to analyze the factors influencing the effectiveness of non-litigation environmental dispute resolution in Indonesia's coastal and marine areas and to develop a preliminary conceptual framework for understanding their interrelationships. The research employs a normative legal approach with a conceptual research design, utilizing statutory, conceptual, and literature-based analytical approaches. Data were collected through an extensive review of legal documents, scientific literature, policy reports, and environmental governance studies relevant to environmental dispute resolution. The findings indicate that the effectiveness of non-litigation environmental dispute resolution is supported by institutional capacity, regulatory support, multi-stakeholder participation, social trust, scientific evidence, and environmental governance quality. Conversely, power asymmetry, institutional limitations, weak implementation of agreements, political and economic intervention, and low environmental legal literacy constitute major barriers to effective dispute resolution. Based on the synthesis of these factors, this study proposes a preliminary conceptual framework that integrates legal foundations, institutional capacity, stakeholder participation, scientific evidence, ADR process quality, and environmental restoration as key determinants of dispute resolution effectiveness. The study contributes to the development of environmental dispute resolution scholarship by offering an integrative conceptual perspective that may serve as a foundation for future empirical research and policy development in coastal and marine environmental governance.*

Keywords: *Non-litigation environmental dispute resolution; alternative dispute resolution; coastal and marine areas; environmental governance; preliminary conceptual framework.*

ABSTRAK. *Sengketa lingkungan di wilayah pesisir dan laut Indonesia semakin kompleks karena interaksi dimensi ekologis, sosial, ekonomi, dan tata kelola. Meskipun litigasi tetap menjadi mekanisme hukum yang tersedia, penyelesaian sengketa lingkungan non-litigasi telah mendapatkan perhatian lebih besar karena fleksibilitasnya, sifat partisipatifnya, dan potensinya untuk memfasilitasi restorasi lingkungan. Namun, efektivitas mekanisme non-litigasi masih dipengaruhi oleh berbagai faktor pendukung dan penghambat yang belum terintegrasi secara komprehensif ke dalam kerangka analitis tunggal, khususnya dalam konteks lingkungan pesisir dan laut. Studi ini bertujuan untuk menganalisis faktor-faktor yang memengaruhi efektivitas penyelesaian sengketa lingkungan non-litigasi di wilayah pesisir dan laut Indonesia dan untuk mengembangkan kerangka konseptual awal untuk memahami keterkaitannya. Penelitian ini menggunakan pendekatan hukum normatif dengan desain penelitian konseptual, memanfaatkan pendekatan analitis berbasis undang-undang, konseptual, dan literatur. Data*

dikumpulkan melalui tinjauan ekstensif terhadap dokumen hukum, literatur ilmiah, laporan kebijakan, dan studi tata kelola lingkungan yang relevan dengan penyelesaian sengketa lingkungan hidup. Temuan menunjukkan bahwa efektivitas penyelesaian sengketa lingkungan hidup non-litigasi didukung oleh kapasitas kelembagaan, dukungan regulasi, partisipasi multi-pemangku kepentingan, kepercayaan sosial, bukti ilmiah, dan kualitas tata kelola lingkungan. Sebaliknya, asimetri kekuasaan, keterbatasan kelembagaan, lemahnya implementasi perjanjian, intervensi politik dan ekonomi, serta rendahnya literasi hukum lingkungan merupakan hambatan utama terhadap penyelesaian sengketa yang efektif. Berdasarkan sintesis faktor-faktor tersebut, studi ini mengusulkan kerangka kerja konseptual awal yang mengintegrasikan landasan hukum, kapasitas kelembagaan, partisipasi pemangku kepentingan, bukti ilmiah, kualitas proses alternatif penyelesaian sengketa, dan restorasi lingkungan sebagai penentu utama efektivitas penyelesaian sengketa. Studi ini berkontribusi pada pengembangan kajian penyelesaian sengketa lingkungan dengan menawarkan perspektif konseptual integratif yang dapat berfungsi sebagai dasar untuk penelitian empiris dan pengembangan kebijakan di masa mendatang dalam tata kelola lingkungan pesisir dan laut.

Kata Kunci: Penyelesaian sengketa lingkungan hidup non-litigasi; alternatif penyelesaian sengketa; wilayah pesisir dan laut; tata kelola lingkungan; kerangka konsep awal.

1. Introduction

Coastal and marine areas are strategic development zone with crucial social-ecological-economic value for Indonesia (Wahyudin, 2016). As an archipelagic nation, Indonesia is highly dependent on coastal and marine resources to support food security, economic growth, trade, transportation, and community well-being (Mahipal, 2010; Wahyudin & Mahipal, 2013). From a socio-ecological systems perspective, coastal areas are viewed not only as ecological spaces but also as spaces of interaction between natural resources, communities, institutions, and economic activities that influence each other at various scales of governance (Charles, 2012; Wahyudin & Mahipal, 2013). However, the increasing intensity of coastal and marine resource utilization in recent decades has increased pressure on the environment, characterized by pollution, ecosystem degradation, conflicts over spatial use, and resource exploitation that exceeds the environment's carrying capacity (Wahyudin, 2025).

Coastal and marine environmental damage not only has ecological impacts but also leads to the loss of various ecosystem services that have significant social-ecological-economic value for communities. Various studies have shown that mangrove, seagrass, and coral reef ecosystems provide provisioning, regulating, supporting, and cultural services that contribute directly to human well-being (Costanza *et al.*, 1997; de Groot *et al.*, 2002; de Groot *et al.*, 2012; Costanza *et al.*, 2014; Wahyudin *et al.*, 2016; Wahyudin *et al.*, 2018; Wahyudin, 2020; Wahyudin *et al.*, 2022a; Arkham *et al.*, 2023). In Indonesia, coastal ecosystem damage has been shown to cause significant economic losses, as demonstrated in a study of coastal ecosystem damage valuation in Bontang City (Adrianto *et al.*, 2016).

Increased development activity in coastal and marine areas not only creates social-ecological problems but also gives rise to various environmental disputes involving diverse actors with differing interests (Mahipal *et al.*, 2025; Wahyudin, 2025; Wahyudin *et al.*, 2025a). These disputes can occur between communities and business actors, communities and the government, or between stakeholders in the utilization of coastal and marine resources (Wahyudin, 2025). Environmental disputes in coastal areas tend to be more complex than those in other sectors because they involve the interconnectedness of ecological, economic, social, and natural resource governance aspects simultaneously (Mahipal *et al.*, 2025). In addition to the losses experienced by the parties, environmental disputes are also related to the damage to environmental functions, the impacts of which can be long-term and affect the broader public interest (Wahyudin *et al.*, 2025a).

The complexity of environmental disputes in coastal and marine areas is also influenced by the high dependence of communities on coastal natural resources for their livelihoods (Mahipal *et al.*, 2025). This economic dependence often creates a conflict of interest between environmental protection efforts and community economic needs (Adrianto *et al.*, 2016). Cinner *et al.* (2009) showed that the level of dependence on fisheries resources affects communities' ability to adapt to changes and restrictions on

resource use. In the Indonesian context, the social, economic, and cultural characteristics of coastal communities influence the dynamics of conflict and the success of sustainable coastal resource management (Wahyudin, 2003; 2013; 2015; Wahyudin *et al.*, 2019).

Within the Indonesian legal framework, environmental dispute resolution can be pursued through litigation or non-litigation. Although litigation mechanisms are legally binding through court decisions, various studies have shown that resolving environmental disputes through the courts often faces obstacles such as lengthy processes, high costs, complex scientific evidence, and limitations in producing solutions oriented toward environmental restoration (Mahipal & Wahyudin, 2019). These conditions have encouraged the development of various non-litigation dispute resolution approaches that emphasize dialogue, negotiation, mediation, and reaching mutual agreements as alternatives for resolving environmental conflicts.

In the environmental context, non-litigation dispute resolution has advantages because it allows the parties to formulate more flexible and adaptive solutions to the specifics of the problems encountered (Mahipal *et al.*, 2025). This mechanism is not only oriented towards resolving conflicts between parties but also opens up space for discussions on environmental restoration, compensation for losses, sustainable resource management, and the prevention of similar conflicts in the future. Therefore, non-litigation dispute resolution is increasingly viewed as an important instrument in supporting the implementation of sustainable development principles and participatory environmental governance.

However, the effectiveness of non-litigation environmental dispute resolution remains a matter of debate in both academic literature and policy practice. Various studies indicate that the success of non-litigation mechanisms is influenced by numerous factors, such as regulatory quality, institutional capacity, the balance of bargaining power between the parties, the availability of scientific data, public participation, and political and social support. On the other hand, various studies also indicate that non-litigation mechanisms are not always able to produce effective resolutions when there is an imbalance of power, weak implementation of agreements, or low capacity of the institutions involved in the dispute resolution process.

Studies on environmental dispute resolution in Indonesia have generally focused on legal procedures, the effectiveness of environmental mediation, alternative dispute resolution, and analysis of specific cases in the natural resources sector. Research on the effectiveness of non-litigation environmental dispute resolution in Indonesia indicates that this mechanism has significant potential to support conflict resolution and environmental restoration. Mahipal *et al.* (2025) found that the effectiveness of environmental dispute resolution in Indonesian waters is influenced by institutional capacity, regulatory support, inter-agency coordination, and stakeholder participation. However, this research has focused on evaluating the implementation of dispute resolution mechanisms and has not integrated these various factors into a comprehensive conceptual framework.

Meanwhile, research on coastal and marine areas has focused more on conflicts over spatial use, coastal resource management, natural resources conservation, or coastal area governance in general. Despite their important contributions, most of this research has addressed the factors influencing environmental dispute resolution separately and has not integrated them into a conceptual framework capable of explaining the effectiveness of non-litigation environmental dispute resolution in the context of coastal and marine areas.

This situation indicates a research gap that requires further attention. To date, there are still limited studies that specifically identify and integrate the various legal, institutional, and social-ecological factors that influence the effectiveness of non-litigation environmental dispute resolution in Indonesia's coastal and marine areas. However, the multidimensional nature of coastal and marine areas demands a more comprehensive analytical approach than the sectoral approach currently used.

Against this background, this study aims to analyze the factors that encourage and hinder the effectiveness of non-litigation environmental dispute resolution in Indonesia's coastal and marine areas. Furthermore, this study seeks to develop a preliminary conceptual framework that explains the relationship between regulations, institutions, multi-stakeholder participation, scientific evidence, and an

environmental recovery orientation in determining the success of environmental dispute resolution. This conceptual framework is expected to serve as a theoretical foundation for the development of future empirical research and provide input for strengthening more effective and sustainable environmental dispute resolution policies. The novelty of this research lies in the development of a preliminary conceptual framework regarding the effectiveness of non-litigation environmental dispute resolution in coastal and marine areas of Indonesia through the integration of legal, institutional, multi-stakeholder participation, scientific evidence, and environmental restoration dimensions. Unlike previous research that tends to address these factors in a fragmented manner, this study offers a conceptual synthesis that can serve as a basis for developing empirical research and formulating more comprehensive environmental dispute resolution policies.

2. Research Method

2.1. Research Design

This research uses a normative legal approach with a conceptual legal research design. This approach was chosen because the research focuses on identifying, analyzing, and synthesizing various factors influencing the effectiveness of non-litigation environmental dispute resolution in coastal and marine areas of Indonesia. In addition to examining the applicable legal framework, this research also aims to develop a preliminary conceptual framework explaining the relationship between legal, institutional, social, and environmental factors in the environmental dispute resolution process.

Conceptual research is used to develop a theoretical understanding of the effectiveness of environmental dispute resolution based on an integration of various concepts developed in the literature on environmental law, alternative dispute resolution (ADR), and environmental governance. Therefore, this research is not oriented toward testing empirical hypotheses, but rather toward developing a conceptual framework that can serve as a basis for further research.

2.2. Research Approach and Framework

The research was conducted through a combination of three main approaches: the statute approach, the conceptual approach, and the literature-based analytical approach. The statute approach was used to analyze various regulations related to environmental protection and management, coastal and marine area management, and environmental dispute resolution mechanisms in Indonesia. The regulatory analysis aimed to understand the normative foundations supporting the implementation of non-litigation environmental dispute resolution. The conceptual approach was used to examine various relevant theories and concepts, including the theory of legal effectiveness, alternative dispute resolution (ADR), environmental governance, public participation, and the concept of environmental restoration. This approach enabled the identification of conceptual relationships between variables that influence the success of environmental dispute resolution. Furthermore, the literature-based analytical approach was used to synthesize the findings from previous research to identify driving and inhibiting factors that consistently emerge in various studies on environmental dispute resolution.

This research is based on the assumption that the effectiveness of non-litigation environmental dispute resolution is the result of the interaction of various interrelated, interconnected and interlinked factors. Therefore, the analysis is not only focused on formal legal aspects, but also considers environmental governance dimensions involving actor participation, institutional support, collaborative stakeholders, disputed parties, availability of scientific evidence, and orientation towards environmental restoration. Through this approach, this research produces a preliminary conceptual framework which can be used as a theoretical basis for understanding the effectiveness of non-litigation environmental dispute resolution as well as becoming a basis for developing empirical research in the future.

2.3. *Sources of Datta and Collecting Technque*

This research utilizes entirely secondary data obtained through library research. The data used consist of primary legal materials, secondary legal materials, and tertiary legal materials. Primary legal materials include various laws and regulations that form the basis for regulating environmental dispute resolution in Indonesia, particularly those related to environmental protection and management, as well as coastal and marine area management. Secondary legal materials include scientific journal articles, academic books, research reports, policy documents, and publications from national and international organizations that discuss ADR, environmental governance, coastal area management, and natural resource conflicts. Tertiary legal materials in the form of legal dictionaries, encyclopedias, and other reference sources are used to strengthen understanding of the concepts used in the research.

Data were collected through a systematic literature review involving the identification, selection, classification, and synthesis of sources relevant to the research focus. The literature was selected based on its thematic relevance, source credibility, theoretical contribution, and relevance to non-litigation environmental dispute resolution. The data collection process focused on four main themes: the legal framework for environmental dispute resolution; ADR mechanisms; environmental governance; and environmental conflicts and disputes in coastal and marine areas.

2.4. *Data Analysis Technique*

Data analysis was conducted using a descriptive-qualitative analysis method combined with a conceptual synthesis approach. The analysis was conducted through four main stages. The first stage is concept identification, which is an inventory of various concepts and factors related to the effectiveness of environmental dispute resolution based on the literature and regulations analyzed. The second stage is factor categorization, which is grouping the factors found into legal, institutional, social, scientific, and environmental dimensions. The third stage is conceptual relationship analysis, which is examining the interrelationships between factors to understand how these factors contribute to the success or failure of non-litigation environmental dispute resolution. The fourth stage is the preparation of a preliminary conceptual framework, which is formulating an initial conceptual framework that describes the relationship between regulations, institutional capacity, scientific evidence support, multi-stakeholder participation, ADR mechanisms, and environmental recovery orientation as determinants of the effectiveness of environmental dispute resolution in coastal and marine areas.

3. **Result and Discussion**

3.1. *Characteristics of Environmental Disputes in Indonesia's Coastal and Marine Areas*

Indonesia's coastal and marine areas are highly strategic ecological and economic areas, serving as hubs for various natural resource utilization activities, from fisheries, aquaculture, tourism, maritime transportation, land reclamation, to industrial and mining activities (Wahyudin, 2016). The highly ecologically sensitive nature of Indonesia's coastal areas means that various forms of environmental disturbance can have far-reaching consequences for the social and economic systems of communities. Coastal environmental sensitivity mapping studies indicate that many coastal areas are highly vulnerable to anthropogenic pressures and environmental change (Wahyudin *et al.*, 2019b). These ecological risks are exacerbated in areas experiencing degradation of mangroves, coral reefs, and other coastal ecosystems (Yonvitner *et al.*, 2021).

In addition to impacting environmental quality, coastal ecosystem damage also results in the loss of highly economically valuable ecosystem services (Adrianto *et al.*, 2016). The economic value of mangrove ecosystem services (Arkham *et al.*, 2023), coral reefs (Arkham *et al.*, 2020; Wahyudin, 2020; Wahyudin & Mahipal, 2020; Wahyudin *et al.*, 2022; Wahyudin *et al.*, 2025b; 2025c), seagrass beds (Wahyudin *et al.*, 2016; Wahyudin *et al.*, 2018; Wahyudin *et al.*, 2025c), and Indonesia's coastal and marine biodiversity (Wahyudin *et al.*, 2019c) indicates that environmental disputes in coastal areas are

not only related to ecological damage but also to the loss of economic and social benefits received by communities.

This increasing intensity of utilization makes a significant contribution to national economic development, but at the same time, it also increases the potential for environmental disputes due to conflicting interests between stakeholders. In many cases, disputes arise as a consequence of environmental pollution, coastal ecosystem degradation, conflicts over the use of marine space, or the inequitable distribution of environmental benefits and risks.

Unlike civil disputes in general, environmental disputes in coastal and marine areas are more complex, involving ecological, social, economic, and institutional dimensions simultaneously. Environmental damage often impacts not only one party but also coastal communities, businesses, governments, and even future generations. Furthermore, the cumulative and long-term nature of environmental impacts makes identifying losses and determining who is responsible more difficult than in conventional disputes.

The complexity of coastal and marine environmental disputes is further exacerbated by the high dependence of communities on local natural resources. Deteriorating environmental quality due to pollution or ecosystem damage not only impacts ecological aspects but also directly impacts livelihoods, household economic resilience, and the social stability of coastal and small island communities. In such circumstances, environmental disputes are no longer understood solely as legal conflicts, but rather as resource governance issues involving multiple interacting interests.

Another characteristic that distinguishes environmental disputes in coastal and marine areas is the high degree of scientific uncertainty. The causal relationship between an activity and its environmental impact often cannot be proven simply because it involves complex ecological processes. For example, declining fish catches can be influenced by various factors, such as pollution, climate change, habitat destruction, or simultaneous pressures on resource exploitation. This situation makes the need for scientific data and evidence increasingly crucial in the dispute resolution process.

Furthermore, environmental disputes in coastal and marine areas generally involve many actors (multi-stakeholder disputes), including local communities, business actors, the central government, regional governments, civil society organizations, and other interest groups. This diversity of actors creates varying interests, capacities, and bargaining positions that can influence the dispute resolution process. Therefore, a resolution approach that relies solely on formal legal instruments is often insufficient to accommodate the complexity of the relationships between the parties involved.

Based on these characteristics, the effectiveness of environmental dispute resolution in coastal and marine areas cannot be understood solely from a legal perspective. The complexity of actors, scientific uncertainty, public interest, and dimensions of environmental sustainability indicate that dispute resolution requires a more integrative approach that considers institutional aspects, stakeholder participation, scientific evidence, and the quality of environmental governance. This understanding serves as the basis for examining the legal basis and governance for non-litigation environmental dispute resolution.

3.2. Legal and Governance Foundations of Non-Litigation Environmental Dispute Resolution

Non-litigation environmental dispute resolution in Indonesia has a relatively strong legal basis. This normative framework stems primarily from Law Number 32 of 2009 concerning Environmental Protection and Management, which provides space for parties to resolve environmental disputes outside the courts through mutually agreed mechanisms. This regulation reflects the recognition that environmental dispute resolution does not always have to be pursued through litigation, especially if the parties desire a faster, more flexible, and more environmentally-restorative solution.

From a legal effectiveness perspective, the successful implementation of a legal mechanism is determined not only by the existence of norms, but also by the parties' ability to comply with and effectively implement those norms (Siregar, 2018). In the context of environmental law, regulatory effectiveness is

also influenced by public legal awareness, institutional capacity, and support from the law enforcement system (Isdiyanto, 2018).

From a modern environmental law perspective, non-litigation dispute resolution is seen as an instrument capable of supporting the implementation of the principles of participation, deliberation, and restorative justice. Through mechanisms such as mediation, negotiation, conciliation, and other forms of alternative dispute resolution (ADR), parties are given the opportunity to formulate solutions that are not solely focused on conflict resolution but also consider environmental protection and the sustainability of natural resources. This approach is particularly relevant in the context of coastal and marine areas, which often involve broad public interests and complex social relationships.

In addition to legitimizing the use of non-litigation mechanisms, the Indonesian legal framework also positions environmental restoration as one of the primary objectives of environmental dispute resolution. This orientation demonstrates that successful dispute resolution is not solely measured by the achievement of an agreement between the parties, but also by the agreement's ability to improve the damaged environment. Therefore, environmental dispute resolution has a distinct character compared to civil dispute resolution in general.

However, the review indicates that the existence of regulations does not automatically guarantee the effectiveness of non-litigation environmental dispute resolution. Various challenges remain in the implementation aspect, including the limited capacity of environmental mediators, the absence of national standards for evaluating the success of environmental dispute resolution, and weak oversight mechanisms for the implementation of agreements. In many cases, the success of the mediation process is not always followed by the successful implementation of the agreed environmental restoration measures.

From an environmental governance perspective, the effectiveness of environmental dispute resolution is determined not only by the quality of regulations, but also by the ability of institutions to facilitate stakeholder participation, provide transparent information, and ensure accountability for the implementation of agreements. Therefore, environmental dispute resolution needs to be understood as part of a broader environmental governance system, where law serves as a normative foundation that must be supported by institutional capacity and multi-stakeholder collaboration.

These findings indicate that regulation is a necessary condition for non-litigation environmental dispute resolution, but not a sufficient condition to ensure its effectiveness. The effectiveness of dispute resolution is ultimately determined by the interaction between the legal basis, institutional capacity, the quality of participation, the availability of scientific evidence, and supportive environmental governance. Therefore, identifying supporting and inhibiting factors is crucial to understanding how the effectiveness of environmental dispute resolution can be improved in the context of Indonesia's coastal and marine areas. In the context of coastal and marine areas, the effectiveness of dispute resolution is also closely related to the principle of appropriate use of marine space and compliance with applicable zoning plans (Priyanta, 2021). Therefore, environmental dispute resolution needs to be positioned as an integral part of sustainable marine spatial governance.

3.3. *Enabling Factors of Effective Non-Litigation Environmental Dispute Resolution in Coastal and Marine Areas*

The results of the literature synthesis indicate that the effectiveness of non-litigation environmental dispute resolution in coastal and marine areas is not determined by a single factor. Rather, such effectiveness is the result of the interaction of various factors originating from institutional, social, knowledge, and environmental governance dimensions (**Table 1**). These factors serve as enabling conditions that enable negotiation, mediation, and other forms of alternative dispute resolution (ADR) to proceed effectively and produce implementable agreements.

Table 1. Synthesis of Enabling Factors for Effective Non-Litigation Environmental Dispute Resolution.

Dimensions	Key Factors	Contribution to Effectiveness
Institutional	Regulations, mediators, institutions	Improving legal certainty and implementation of agreements
Social	Participation, trust, social capital	Strengthening legitimacy and compliance
Knowledge	Scientific evidence and environmental information	Reducing information conflicts and increasing objectivity
Governance	Transparency, coordination, accountability	Supporting effective dispute resolution governance

Thus, the findings, as outlined in **Table 1**, indicate that the effectiveness of environmental dispute resolution is the result of a combination of mutually reinforcing supporting factors. However, the presence of these supporting factors does not always guarantee successful dispute resolution if various structural and institutional barriers persist that disrupt the dispute resolution process.

The institutional dimension is a key foundation for supporting the effectiveness of non-litigation environmental dispute resolution. The existence of regulations that legitimize ADR mechanisms creates legal certainty for parties to choose out-of-court dispute resolution. Furthermore, the capacity of the institutions involved in the dispute resolution process, including mediators, government agencies, and civil society organizations, significantly determines the quality of dialogue facilitation and the implementation of agreed outcomes. In the context of coastal and marine areas, institutional support becomes increasingly crucial because disputes generally involve multiple actors with differing interests. Therefore, the effectiveness of non-litigation mechanisms requires institutions capable of functioning as independent, credible facilitators with adequate technical capacity.

Literature shows that community participation, trust between parties, and social capital are important factors influencing the success of environmental dispute resolution. High levels of participation allow parties to openly express their interests and aspirations, thereby increasing the chances of reaching an understanding. Community social capacity also influences the effectiveness of environmental conflict resolution. Research on fisherman resilience shows that the community's ability to build cooperation, adaptation, and collective resource management contributes to the successful resolution of various coastal environmental problems (Arkham *et al.*, 2021). In coastal areas of Indonesia, the existence of local wisdom and traditions of deliberation also contribute to strengthening the social legitimacy of dispute resolution outcomes. The values of mutual cooperation, community solidarity, and consensus-based conflict resolution can serve as social capital that supports the success of non-litigation mechanisms.

Environmental disputes differ from general disputes in that they involve complex scientific aspects. Therefore, the availability of scientific evidence is a crucial factor in supporting effective dispute resolution. Data on pollution levels, ecosystem conditions, environmental quality, and economic impacts on communities serve as an objective basis for negotiation and mediation. Credible scientific evidence can reduce differences in perception between parties and improve the quality of decision-making during the dispute resolution process. In the context of social-ecological systems, scientific information support enables parties to understand the relationship between environmental change, human activities, and the resulting socio-economic impacts (Wahyudin *et al.*, 2022a; Wahyudin *et al.*, 2023).

Dimensions of environmental governance include transparency, accountability, inter-institutional coordination, and information disclosure. These factors play a role in creating an institutional environment that supports fair and sustainable dispute resolution. From an environmental governance perspective, environmental dispute resolution is viewed not only as a conflict resolution mechanism but also as part of an environmental management process involving various stakeholders. Therefore, the better the quality of existing environmental governance, the greater the chance of successful non-litigation dispute resolution.

3.4. *Constraining Factors of Effective Non-Litigation Environmental Dispute Resolution*

Apart from supporting factors, the results of the literature synthesis also show that there are various obstacles that can reduce the effectiveness of non-litigation environmental dispute resolution. These obstacles can be grouped into four main dimensions, namely structural, institutional, governance and socio-legal (**Table 2**).

Table 2. Synthesis of Enabling Factors for Effective Non-Litigation Environmental Dispute Resolution.

Dimensions	Constraining Factors	Impact to Effectiveness
Structural	Unequal bargaining power	Reduces the fairness of the negotiation process
Institutional	Weak mediator and monitoring capacity	Hinders agreement implementation
Governance	Political and economic intervention	Reduces the independence of the settlement process
Socio-Legal	Low environmental legal literacy	Reduces community participation

The synthesis of supporting and inhibiting factors as outlined in **Table 2** shows that the effectiveness of non-litigation environmental dispute resolution is a multidimensional phenomenon that cannot be explained solely through formal legal aspects. Therefore, a conceptual framework is needed that can integrate these various factors into a systematic analytical relationship.

As well as mentioned in **Table 2**, structural barriers primarily relate to unequal bargaining power between disputing parties. In many cases, coastal communities face companies or institutions with greater economic resources, access to information, and political influence. This inequality can compromise the quality of negotiation and mediation processes because not all parties have equal capacity to pursue their interests. As a result, the resulting agreements may not fully reflect the principles of substantive justice.

Institutional barriers include the limited number of competent environmental mediators, weak capacity of dispute resolution institutions, and suboptimal oversight mechanisms for the implementation of agreements. In many cases, the success of the mediation process is not followed by successful implementation of the agreement due to the lack of an adequate monitoring system. This situation causes some disputes to re-emerge after the resolution process is considered complete.

The governance dimension can also become a source of obstacles when political or economic interests intervene in the dispute resolution process (Reuben, 2004). Coastal and marine areas often have high economic value, so decisions related to dispute resolution are not entirely free from pressure from particular interests. Such intervention can undermine the independence of the mediation process and affect the quality of the agreement reached.

Low levels of environmental legal literacy and limited public access to information pose significant socio-legal barriers (Rajamadi, 2007; Sari, 2025). A lack of understanding of environmental rights and dispute resolution mechanisms often puts communities at a disadvantage in negotiation and mediation processes.

3.5. *Towards a Preliminary Conceptual Framework of Effective Non-Litigation Environmental Dispute Resolution in Coastal and Marine Areas*

Theoretically, this framework is rooted in a socio-ecological systems perspective, which views environmental conflict resolution as the result of interconnected interactions between actors, institutions, resources, and governance mechanisms (Charles, 2012). This perspective has been widely used in studies of coastal area management, resource conservation, and small island development (Wahyudin *et al.*, 2016; Wahyudin *et al.*, 2018; Wahyudin *et al.*, 2022a; Wahyudin *et al.*, 2023; Arkham *et al.*, 2023).

Based on a synthesis of the identified supporting and inhibiting factors, this study develops a preliminary conceptual framework (**Figure 1**) that explains the effectiveness of non-litigation environmental dispute resolution in Indonesia's coastal and marine areas. This framework is not intended as an empirically tested model, but rather as a theoretical representation of the relationships between factors that conceptually influence the success of environmental dispute resolution.

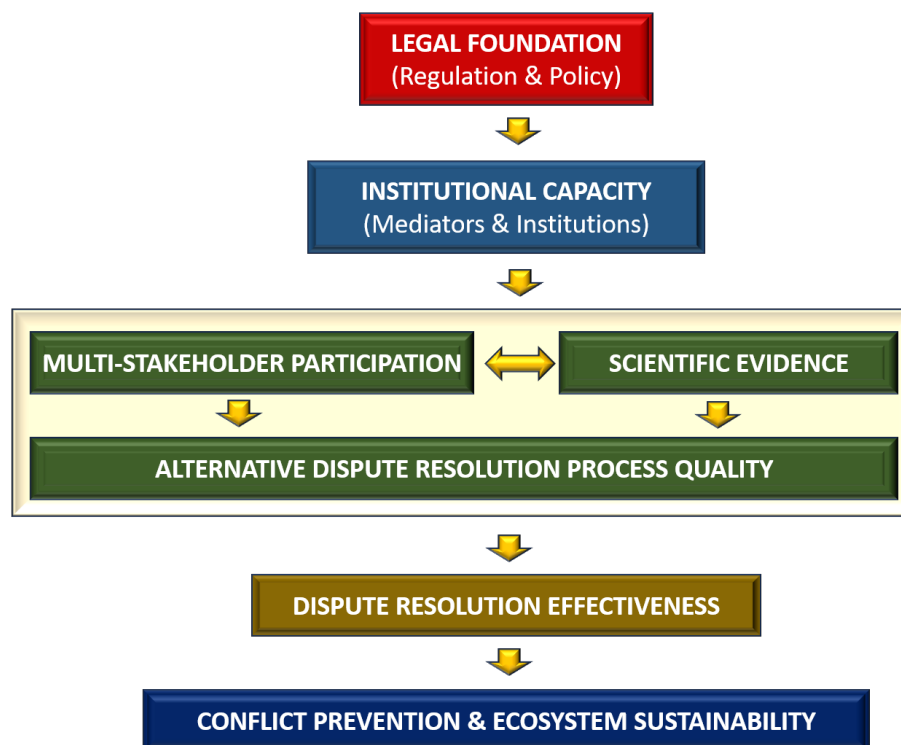


Figure 1. Preliminary Conceptual Framework of Effective Non-Litigation Environmental Dispute Resolution.

This conceptual framework as well as flowcharted in **Figure 1** is built on the assumption that the effectiveness of environmental dispute resolution is the result of the interaction between institutional capacity, the quality of environmental governance, scientific evidence, multi-stakeholder participation, and the quality of the ongoing ADR process. These five elements influence each other and shape the ability of the dispute resolution system to produce environmental recovery and prevent recurrent conflicts.

Non-litigation environmental dispute resolution is an increasingly important instrument for supporting environmental protection and management in Indonesia's coastal and marine areas. The complex characteristics of coastal environmental disputes, involving multiple actors, scientific uncertainty, public interest, and long-term social-ecological impacts, demonstrate that dispute resolution cannot rely solely on formal legal approaches through litigation. In this context, non-litigation mechanisms offer a more flexible, participatory, and adaptive space for reaching agreements that not only resolve conflicts between parties but also support environmental restoration efforts and the sustainability of coastal and marine resources.

The study shows that the effectiveness of non-litigation environmental dispute resolution is influenced by a combination of interacting, intercorrelating and interlinking factors. These factors include regulatory and institutional support, mediator capacity, multi-stakeholder participation, social trust, the availability of scientific evidence, and the quality of environmental governance. Conversely, the effectiveness of these mechanisms can be hampered by unequal bargaining power between the parties, limited institutional capacity, weak implementation of agreements, interference from political and economic interests, and low public environmental legal literacy. These findings indicate that the

effectiveness of environmental dispute resolution is a multidimensional phenomenon that cannot be explained by a single perspective.

Based on the synthesis of these factors, this study developed a preliminary conceptual framework that positions the legal basis, institutional capacity, multi-stakeholder participation, scientific evidence, the quality of alternative dispute resolution (ADR) processes, and an orientation toward environmental restoration as key elements influencing the effectiveness of non-litigation environmental dispute resolution in coastal and marine areas. This conceptual framework is not intended to be an empirically tested model, but rather an initial theoretical representation that explains the interrelationships between factors found in the literature and the applicable legal framework.

The primary contribution of this study lies in integrating various legal, institutional, social, scientific, and environmental governance dimensions into a more comprehensive conceptual framework for understanding the effectiveness of non-litigation environmental dispute resolution. In doing so, this study broadens the discourse that has tended to discuss these factors separately. The resulting conceptual framework is expected to serve as a theoretical foundation for future empirical research, whether through case studies, surveys, or quantitative approaches aimed at examining the relationships between the identified variables.

From a policy perspective, the results of this study indicate the need to strengthen the institutional capacity for resolving environmental disputes, improve the competence of environmental mediators, develop a more transparent and evidence-based environmental information system, and expand public participation in the dispute resolution process. Furthermore, any non-litigation environmental dispute resolution mechanism should be directed not only at reaching agreements between the parties but also at restoring environmental functions and preventing recurrent conflicts as part of efforts to achieve sustainable coastal and marine governance.

4. Conclusion

Non-litigation environmental dispute resolution is an increasingly important instrument for supporting environmental protection and management in Indonesia's coastal and marine areas. The complex characteristics of coastal and marine environmental disputes, involving multiple actors, scientific uncertainty, public interest, and long-term social-ecological impacts, demonstrate that dispute resolution cannot rely solely on formal legal approaches through litigation. In this context, non-litigation mechanisms offer a more flexible, participatory, collaborative and adaptive space for reaching agreements that not only resolve conflicts between parties but also support environmental restoration efforts and the sustainability of coastal and marine resources.

The study shows that the effectiveness of non-litigation environmental dispute resolution is influenced by a combination of interacting, intercollerating, and interlinkaging factors. These factors include regulatory and institutional support, mediator capacity, multi-stakeholder participation, social trust, the availability of scientific evidence, and the quality of environmental governance. Conversely, the effectiveness of these mechanisms can be hampered by unequal bargaining power between the parties, limited institutional capacity, weak implementation of agreements, interference from political and economic interests, and low public environmental legal literacy. These findings indicate that the effectiveness of environmental dispute resolution is a multidimensional phenomenon that cannot be explained by a single perspective.

Based on the synthesis of these factors, this study developed a preliminary conceptual framework that positions the legal basis, institutional capacity, multi-stakeholder participation, scientific evidence, the quality of ADR processes, and an orientation toward environmental restoration as key elements influencing the effectiveness of non-litigation environmental dispute resolution in coastal and marine areas. This conceptual framework is not intended to be an empirically tested model, but rather an initial theoretical representation that explains the interrelationships between factors found in the literature and the applicable legal framework.

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