



**The Relationship Between Socio-Economic Well-Being and A Healthy Environment:
A Case Study of Shipyard Development in Batu Pute Village**

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Abstract

This article examines the relationship between shipbuilding industry development and the dynamics of socioeconomic well-being and environmental sustainability in coastal areas through a contextual approach and structuration analysis. Although numerous studies on coastal industrialization have been conducted, most still focus on macroeconomic aspects and have not thoroughly examined how the interaction between structure and agency shapes the impacts of development at the local level. Using a qualitative case study approach involving in-depth interviews, field observations, document analysis, and focus group discussions (FGDs), this research explores the dynamics of shipbuilding industry development in Batu Pute Village, Barru Regency. The findings indicate that industrialization not only presents economic opportunities such as job creation and increased local economic activity, but also gives rise to complex, multidimensional consequences. The resulting positive impacts tend to be limited and unevenly distributed, while negative impacts such as environmental degradation, social conflict, and the marginalization of coastal communities are actually more dominant. These varying impacts are influenced by power relations among development actors, weak community participation, and suboptimal oversight of environmental aspects. The results of this study confirm that industrial development in coastal areas is not merely an economic process, but a socio-ecological process fraught with competing interests and inequalities. Therefore, this study offers an analytical framework that emphasizes the importance of an inclusive development approach, participatory and ecologically just, as well as contribute to the broader discourse on sustainable development in coastal areas.

Keywords

Shipbuilding industry; socioeconomic well-being; environment; structuration theory; coastal development



Introduction

Industrialization has traditionally been regarded as a major engine of economic expansion, particularly through its role in encouraging investment, generating employment opportunities, and increasing production output (Michael Todaro & Stephen C. Smith, 2015; World Bank, 2020). Nevertheless, beyond its economic contributions, industrial growth also reshapes social structures by altering labor systems, accelerating urban development, and transforming local economic arrangements. In many developing contexts, industrial expansion is often equated with progress and modernization, yet its impacts are uneven, frequently privileging certain groups while disadvantaging others. This duality underscores the need to assess industrialization not only from an economic standpoint but also from a broader social perspective.

In reality, industrial development often generates tension between economic priorities and social well-being, particularly when communities are excluded from planning and decision-making processes (Amartya Sen, 1999; Robert Chambers, 1997). Such exclusion reflects deeper structural issues, including unequal power relations and weak governance arrangements. When local voices are not incorporated, policies may fail to reflect actual community needs, resulting in outcomes that disrupt social harmony and diminish trust among stakeholders.

Industrialization should therefore be understood as a multidimensional process involving not only economic performance but also legitimacy, fairness in benefit distribution, and environmental responsibility (Jeffrey D. Sachs, 2015). Projects lacking social acceptance frequently encounter resistance, protests, or rejection from affected populations. This highlights the importance of participatory governance systems that promote transparency and accountability. Without these safeguards, industrial initiatives risk becoming sources of conflict rather than drivers of sustainable progress.

Empirical evidence suggests that limited public participation can weaken project legitimacy while also increasing the likelihood of conflict, legal ambiguity, and community opposition (UNEP, 2023; Environmental Governance in Transition, 2025). These disputes may range from localized land-use disagreements to broader environmental justice movements, often delaying implementation and raising costs. Consequently, addressing governance shortcomings is essential not only for social stability but also for economic efficiency.

In coastal regions, these challenges are even more pronounced due to the close relationship between communities and their natural environment (FAO, 2022). Industrial activities such as shipbuilding and port expansion frequently lead to pollution, habitat loss, and resource depletion, which directly threaten livelihoods dependent on marine ecosystems. Coastal populations, particularly small-scale fishers, are especially vulnerable to such changes.



Research indicates that industrial expansion in these areas contributes to land conversion, environmental decline, and reduced resource quality (Barbier, 2017; Argarani et al., 2025). These changes also disrupt social and cultural systems, weakening traditional practices and local resilience. At the same time, economic gains from industrialization are often distributed unevenly, intensifying inequality (Piketty, 2014; Syawaludin & Alfiyani, 2025). Communities frequently bear environmental costs without receiving proportional benefits.

Governance weaknesses further aggravate these issues, particularly in licensing, transparency, and spatial planning enforcement (OECD, 2017). Poor oversight can enable regulatory violations and prioritize short-term profits over long-term sustainability. Misalignment between development practices and land-use regulations also increases health risks and the potential for social conflict (Kurniawan et al., 2023; Li et al., 2024).

Moreover, development processes that exclude local participation tend to reinforce social inequality, concentrating benefits among powerful actors while marginalizing others (Bebbington et al., 2018; Bebbington et al., 2024). Although studies on coastal industrialization have expanded, many still analyze economic and environmental aspects separately, lacking an integrated perspective that considers social and power dynamics (Ostrom, 2009; Scoones, 2016). Additionally, issues such as legitimacy, transparency, and regulatory compliance remain underexplored. Theoretical approaches have also rarely incorporated structuration theory (Giddens, 1984), which offers insight into the interaction between institutional structures and human agency.

At a broader level, industrialization in coastal areas represents a complex interplay among actors with competing interests and varying degrees of influence (Jessop, 2001; Harvey, 2005). While policies shape development directions, their outcomes depend heavily on local dynamics, including participation and power distribution. Diverging interpretations among stakeholders often lead to conflict, particularly during planning and implementation stages.

When governance systems are inclusive and accountable, industrial development is more likely to produce equitable and sustainable outcomes. Conversely, when economic interests dominate without sufficient oversight, negative consequences such as environmental damage and social exclusion become more evident. Without a comprehensive analytical framework, development efforts risk fragmentation and failure to meet sustainability goals (Janin Rivolin & Nowak, 2026). These challenges extend beyond academic discussions, directly affecting the daily lives of coastal communities. Unequal benefit distribution and environmental degradation can reduce well-being, weaken resilience, and limit adaptive capacity. Therefore, industrial development in coastal contexts must be approached as a multidimensional issue requiring integrative and critical analysis.



In response to these gaps, this study adopts a structuration perspective to examine the shipbuilding industry in Batu Pute Village, Barru Regency. By combining social, economic, and ecological dimensions, it seeks to highlight the roles of power relations, participation, and legitimacy in shaping development outcomes. This approach is expected to contribute both theoretically and practically by supporting more inclusive, participatory, and environmentally sustainable policy frameworks.

Literature Review

Coastal Industrialization and the Dilemma of Economic

Industrial expansion in coastal regions has become a key approach to stimulating economic development, particularly through sectors such as maritime industries, logistics networks, and marine-based production systems. Many recent analyses indicate that coastal zones make substantial contributions to regional economies; however, these benefits are often accompanied by increasing ecological stress due to intensive resource use. As highlighted by (Jing et al., 2025), “coastal cities play a pivotal role in national economic growth yet are increasingly challenged by environmental degradation.” This statement reflects a fundamental contradiction in coastal development, where economic advancement is closely intertwined with environmental strain.

This contradiction illustrates that while industrialization can accelerate economic performance, it simultaneously places heavy pressure on coastal ecosystems. Activities such as port expansion, shipbuilding, and marine resource extraction often lead to pollution, habitat disruption, and declining environmental quality. Over time, these impacts not only threaten biodiversity but also undermine the sustainability of the very resources that support economic growth. As a result, coastal regions frequently experience a trade-off between development gains and ecological preservation.

In the Indonesian context, similar patterns have been observed, particularly in efforts to promote coastal economic growth through the blue economy framework. This approach is designed to enhance community welfare by utilizing marine resources in a sustainable manner. However, empirical findings suggest that its effectiveness largely depends on how resource management is implemented. Without strong governance and meaningful community involvement, the benefits of development tend to be unevenly distributed. In this regard, it has been noted that “rapid exploitation of coastal resources has led to environmental degradation... and marginalization of local communities.”

This condition highlights that economic initiatives in coastal areas do not automatically lead to inclusive prosperity. Instead, when development is driven primarily by market interests without adequate safeguards, it can deepen social and economic disparities. Local communities, especially those dependent on traditional livelihoods such as fishing, are often the most affected



by environmental decline and restricted access to resources. At the same time, larger economic actors are more likely to capture the majority of financial benefits.

Therefore, coastal industrialization must be understood as a complex and multidimensional process. It requires not only economic planning but also careful consideration of environmental sustainability and social equity. Policies that prioritize inclusivity, transparency, and participatory governance are essential to ensure that development outcomes are balanced and beneficial for all stakeholders. Without such measures, industrialization in coastal areas risks reinforcing inequality and accelerating environmental degradation rather than contributing to long-term sustainable development.

Social Impacts of Industrialization: Community Exclusion and Disruption

Recent studies indicate that the effects of industrialization extend far beyond economic growth, significantly reshaping social structures within communities. These transformations are often reflected in weakening social bonds, rising tensions, and the increasing exclusion of local populations from development processes. Rather than strengthening collective life, industrial expansion can disrupt established relationships and reduce the sense of solidarity that traditionally characterizes community interactions.

Within coastal development settings, excessive and poorly regulated use of natural resources frequently contributes to the sidelining of local communities. This situation becomes more pronounced when residents are not involved in planning or decision-making processes that directly affect their livelihoods. Such patterns reinforce critiques of top-down development models, which often prioritize economic objectives while overlooking social considerations and local knowledge systems.

In addition, these social transformations are closely connected to broader economic and environmental pressures. Industrial activities tend to alter socio-ecological systems, creating new challenges for communities that rely heavily on natural resources. Empirical evidence suggests that shifts in environmental conditions—such as declining resource availability or ecosystem degradation—have direct consequences for community welfare. This impact is particularly severe for vulnerable groups whose livelihoods depend on fisheries, agriculture, or other resource-based activities.

Overall, industrialization in coastal areas produces complex social outcomes, where economic progress is frequently accompanied by social disruption and inequality. These findings highlight the importance of integrating social dimensions into development planning to ensure that industrial growth does not come at the expense of community well-being.



Environmental Degradation and Coastal Ecological Crisis

From an ecological standpoint, the expansion of industry in coastal zones has become a key driver of environmental decline, particularly affecting marine habitats and shoreline ecosystems. Activities such as shipbuilding operations, port construction, and the development of maritime facilities introduce various forms of disturbance, including pollution, habitat alteration, and resource overuse. These pressures collectively weaken the resilience of coastal environments and accelerate ecological imbalance.

Research (LioRET et al., 2025) indicates that contemporary marine-based industrial growth poses serious risks to ecosystem sustainability, noting that “environmental status... could be compromised by industrial activities.” This highlights the growing strain placed on biodiversity and protected marine areas, where industrial expansion often overlaps with ecologically sensitive zones. As a result, conservation efforts face increasing challenges, especially in maintaining the balance between economic utilization and environmental protection.

Furthermore, findings (Ananda, 2025) underline that the impacts of industrialization are not isolated but tend to accumulate across sectors and over time. Because of this complexity, it is argued that “conventional environmental assessments remain insufficient” in capturing the full scope of environmental consequences. This suggests that traditional evaluation frameworks are no longer adequate, and more integrated, cross-sectoral approaches are needed to properly assess and manage environmental risks.

The consequences of ecological degradation extend beyond environmental concerns and directly affect the livelihoods of coastal populations. Declining fish stocks, for example, reduce income for fishing communities, while environmental instability can increase vulnerability to natural hazards such as coastal erosion and flooding. Additionally, deteriorating environmental quality contributes to a broader decline in living conditions, affecting health, safety, and overall well-being. These interconnected impacts emphasize that environmental issues in coastal industrialization are inseparable from social and economic challenges, reinforcing the need for sustainable and inclusive management strategies.

Trade-off between Economic Growth and Environmental Sustainability

A central concern in current academic discussions is the tension between economic expansion and the preservation of the environment. Industrial development is frequently associated with rapid economic gains, particularly in the short term, yet it often produces negative ecological consequences that emerge over a longer period. This creates a dilemma in which development strategies prioritize immediate economic benefits while overlooking sustainability considerations.



Research (Astuti et al., 2025) indicates that although coastal economic sectors make a substantial contribution to regional gross domestic product (GRDP), their environmental performance tends to remain relatively low. This is largely due to factors such as elevated emissions and intensive energy use. Such findings illustrate that economic progress does not automatically correspond with environmental responsibility, highlighting a disconnect between growth indicators and ecological outcomes.

In addition, (Fadhlillah, 2025) points out that the tension between economic priorities and environmental protection continues to be a significant issue in development policy debates. Efforts to maximize resource utilization often result in ecological degradation, suggesting that growth-oriented approaches frequently overlook long-term environmental consequences. This ongoing debate reflects the challenge of balancing development objectives with sustainability principles.

Overall, these perspectives emphasize that industrialization involves complex trade-offs. While it can generate economic opportunities and improve productivity, it may simultaneously degrade environmental systems if not managed carefully. Addressing this challenge requires integrated policies that align economic goals with environmental stewardship, ensuring that development is both productive and sustainable over time.

Political Ecology Perspective and Structural Inequality

From a political ecology standpoint, industrialization is not simply an economic transformation but also a process deeply embedded in power relations that shape how resources are controlled and distributed. Existing literature indicates that industrial expansion is largely driven by state institutions and corporate actors, who possess greater authority, capital, and access to decision-making arenas. In contrast, local communities—particularly those dependent on natural resources—often have limited influence over how development is planned and implemented. This imbalance reflects structural inequalities in governance systems, where certain actors dominate while others remain marginalized.

Such asymmetry has direct implications for the distribution of both benefits and burdens. Economic gains generated through industrial activities tend to accumulate among dominant groups, while environmental and social costs are disproportionately borne by local populations. Communities living in coastal areas, for instance, frequently experience declining environmental quality, reduced access to resources, and increasing vulnerability, without receiving equivalent economic advantages. These patterns are consistent with broader findings that coastal industrialization can intensify marginalization and deepen social inequality rather than alleviate it.



Despite the growing body of research on industrialization, several important gaps remain evident in recent literature (2024–2026). First, there is still a lack of studies that holistically integrate social, economic, and environmental dimensions into a single analytical framework. Much of the existing work continues to treat these aspects separately, limiting a comprehensive understanding of industrial development. Second, research specifically examining the shipbuilding sector within a socio-ecological context remains scarce, even though this industry plays a significant role in coastal economies. Third, empirical investigations at the local level are still limited, particularly in regions such as eastern Indonesia, where development dynamics may differ significantly from more studied areas. Fourth, there is insufficient attention to the analysis of power relations in shaping coastal industrialization, despite its critical importance in determining outcomes.

In response to these gaps, this study seeks to contribute a more integrated and context-sensitive perspective on coastal industrial development. By employing structuration theory as its analytical lens, the research conceptualizes industrialization as a dynamic process emerging from the interaction between structure—such as policies, institutions, and economic systems—and agency, represented by the actions and responses of local communities. This approach enables a more nuanced understanding of how development is negotiated, contested, and experienced at the local level.

A key contribution of this study lies in its emphasis on power relations, community participation, and social legitimacy as central factors influencing development outcomes. Rather than viewing industrialization purely as an economic process, this research highlights its socio-political and ecological dimensions. Empirically, the study focuses on the shipbuilding industry in Batu Pute Village, a case that has received limited scholarly attention, particularly within the context of eastern Indonesia. This localized analysis provides valuable insights into how global and national development agendas are translated into specific community experiences.

By combining a political ecology perspective with structuration analysis, this study offers a more comprehensive framework for examining industrialization. It not only advances theoretical understanding by bridging gaps between structure and agency but also provides practical insights into issues such as inequality, environmental degradation, and community marginalization. Ultimately, the novelty of this research lies in its multidimensional integration, its focus on power and participation, and its contribution to addressing both conceptual and empirical limitations in the study of coastal industrialization.

Methods

This research adopts a qualitative method with a descriptive and explanatory orientation to examine the socio-economic and environmental consequences of shipbuilding industry



expansion in Batu Pute Village, Barru Regency. A qualitative strategy is considered appropriate because it enables a deeper understanding of lived experiences, social interpretations, and the configuration of power relations that cannot be adequately captured through numerical data alone. Rather than aiming for broad generalization, the study emphasizes contextual insight into how structural elements—such as policies, regulations, and economic interests—interact with community agency within the process of industrial development. In this framework, the researcher functions as the main analytical instrument, interpreting data reflexively while ensuring consistency and methodological discipline throughout the study (Creswell & Poth, 2018; Denzin & Lincoln, 2018).

The selection of Batu Pute Village as the research site was conducted deliberately due to its relevance as a coastal area experiencing industrial pressures alongside complex social and ecological conditions. This setting provides an opportunity to explore how shipyard-related activities influence community structures, economic distribution, and environmental sustainability in a localized context. The study involves participants drawn from affected residents, government representatives, and other stakeholders connected to industrial development, either directly or indirectly. Informants were identified through a snowball sampling technique, allowing the researcher to reach key individuals based on referrals from earlier participants, thereby ensuring the richness and relevance of the data collected (Noy, 2008). The process of data gathering continued until saturation was achieved, indicated by recurring information and the absence of substantially new insights.

To obtain comprehensive data, three primary techniques were employed: in-depth interviews, direct observation, and document review. Interviews were carried out using a semi-structured format, enabling participants to share their perspectives, experiences, and interpretations regarding industrial impacts, shifts in social relations, and emerging economic changes. All conversations were recorded and transcribed verbatim to maintain accuracy and preserve the authenticity of the information (Kvale & Brinkmann, 2015). Observational methods were used to capture real conditions in the field, including environmental changes, industrial operations, and patterns of daily interaction within the community. Additionally, document analysis was conducted on policy texts, planning reports, and regulatory materials to support triangulation and enhance the robustness of the findings (Bowen, 2009).

The analytical process follows the interactive framework proposed by Miles, Huberman, and Saldaña, which involves three interconnected steps. First, data reduction is undertaken by selecting, coding, and organizing information into thematic categories, while filtering out irrelevant content. Second, data display is presented in the form of a structured narrative to identify patterns, linkages, and emerging dynamics. Third, conclusions are developed and



continuously verified through iterative interpretation and cross-checking between data sources and methods to ensure validity (Miles et al., 2014). This process is not linear but cyclical, allowing the researcher to refine interpretations as new insights emerge during fieldwork.

To strengthen the trustworthiness of the study, several validation strategies are applied, including triangulation of data sources and methods, member checking, and peer discussion. These techniques help reduce potential bias and improve the credibility of the findings (Patton, 2015). Ethical considerations are also strictly upheld, such as obtaining informed consent, ensuring participant anonymity, safeguarding confidentiality, and guaranteeing voluntary participation without coercion.

Overall, the methodological design is intended not only to collect empirical evidence but also to produce a comprehensive and reflective understanding of industrialization dynamics in coastal areas. By combining contextual depth with analytical rigor, this approach contributes to broader discussions in development sociology and political ecology, particularly in explaining the relationships among industrial growth, power structures, and environmental sustainability.

Results

This section presents the main findings on shipbuilding industry expansion in Batupute Village, Barru Regency, focusing on socio-economic change, distribution of impacts, and development practices. The results show a complex relationship between economic growth and social-environmental decline. While the industry creates jobs and stimulates local economic activity, the benefits are limited and unevenly distributed. In contrast, negative impacts—such as environmental damage, social tension, and reduced community participation—are more widespread and long-lasting. Overall, industrial development in coastal areas is not a simple path to improved welfare, but a contested process shaped by unequal power relations, resource control, and community capacity to adapt.

1. Marginalization of Participation and Structural Power Inequality

One of the key findings of this study is the limited community participation in the development planning process, which ideally should underpin inclusive and sustainable development. Interview results reveal that most residents lack access to information about development plans prior to implementation. This reflects not only weak transparency and accountability but also the failure to apply participatory principles. The absence of public deliberation spaces reduces communities to passive objects rather than active subjects in shaping development, thereby weakening the social legitimacy of projects, as they are not based on collective consent (Kurniawan et al., 2022).

From a structuration perspective, this condition illustrates the dominance of structure over agency. Institutional frameworks, state policies, and economic power held by governments and



corporations constrain and shape community action through unequal access to authoritative and allocative resources, limiting meaningful participation (Giddens, 1984; Creswell & Poth, 2018). These findings reinforce the argument that coastal industrial development is often implemented through a top-down approach that neglects social and ecological considerations. Consequently, economic benefits are distributed unequally, while communities bear disproportionate burdens. From a political ecology perspective, this reflects capital-oriented development practices that prioritize economic interests over social justice and sustainability, resulting in low public acceptance and increasing the potential for social conflict (Bebbington et al., 2024).

2. Social Transformation and Disruption of Community Life

Industrial development has significantly transformed rural social structures, reshaping not only economic activities but also the everyday social life of communities. One of the most visible consequences is the deterioration of communal spaces, which traditionally function as centers of social interaction, cultural expression, and collective identity. Pollution, excessive noise, and uncontrolled industrial activity have degraded these spaces, making them less accessible and less conducive to community engagement. As a result, patterns of social interaction have become fragmented, and opportunities for collective gatherings have diminished. This erosion of shared spaces weakens social cohesion and reduces the capacity of communities to maintain strong interpersonal relationships.

These transformations also reflect deeper structural inequalities, particularly in terms of power relations between industrial actors and local communities. Communities are often compelled to adapt to conditions imposed upon them without meaningful consultation or participation in decision-making processes. This lack of agency highlights the imbalance of power, where economic and political interests dominate over local needs and aspirations. In many cases, residents have limited capacity to resist industrial pressures due to economic dependency, lack of institutional support, or restricted access to formal channels of advocacy. Consequently, adaptation becomes a necessity rather than a choice, reinforcing patterns of marginalization.

The disruption of daily life further illustrates the extent to which industrial development intrudes into the private and social spheres of rural communities. Activities that were once routine, such as resting, socializing, or engaging in religious practices, are increasingly affected by industrial operations. Noise pollution, for instance, can interfere with sleep and reduce overall well-being, while environmental contamination may limit the use of spaces for communal or spiritual activities. These disruptions signify a blurring of boundaries between industrial and personal spaces, where the expansion of economic activity encroaches upon the intimate aspects of community life. Such conditions ultimately contribute to a decline in overall quality of life, as highlighted in previous studies (Denzin & Lincoln, 2018; Harvey, 2005).

In addition to these immediate impacts, industrial development also generates longer-term social consequences, particularly in the form of growing dissatisfaction among community members. Feelings of injustice and exclusion often emerge when communities perceive that they bear the costs of development without receiving equitable benefits. This dissatisfaction is compounded by weak mechanisms for conflict resolution, which limit the ability of communities to address grievances effectively. In the absence of

transparent and inclusive governance structures, tensions may remain unresolved, creating a situation of latent conflict.

These latent tensions are especially concerning because they have the potential to escalate into open conflict if not addressed appropriately. Historical and contemporary studies suggest that unresolved grievances, when combined with structural inequalities, can lead to various forms of resistance, ranging from subtle acts of non-compliance to more overt collective action (Kurniawan et al., 2023; Scott, 1985). Without inclusive governance that facilitates dialogue, participation, and fair negotiation, industrial development risks becoming a source of social instability rather than progress.

Furthermore, the weakening of social cohesion reduces the community's ability to respond collectively to challenges. When trust and solidarity decline, it becomes more difficult for communities to organize, advocate for their rights, or develop adaptive strategies. This situation not only increases vulnerability but also undermines long-term sustainability, as social resilience is a key component of sustainable development.

Overall, the transformation of rural social structures under industrial development reflects a complex interplay between environmental change, power dynamics, and social relations. The deterioration of communal spaces, disruption of daily life, and emergence of latent conflict highlight the need for more inclusive and participatory approaches to development. Strengthening governance mechanisms, ensuring community involvement, and protecting social as well as environmental well-being are essential steps toward achieving more equitable and sustainable outcomes.

Table 1.

Analysis of Social Transformation and Disruption of Community Life

No	Analysis Aspects	Research Findings	Researcher's Analysis	Social Implications
1	Social Structure	Shift due to industry	From communal to fragmented	Weakening cohesion
2	Social Space	Disrupted by pollution/noise	Loss of interaction function	Reduced interaction quality
3	Interaction	Less frequent	Shift to individualism	Social fragmentation
4	Adaptation	Forced adjustment	Power imbalance	Loss of autonomy
5	Daily Life	Disrupted activities	Industry enters private space	Blurred boundaries
6	Industrial Control	No time limits	Weak oversight	Lower quality of life
7	Power Relations	No resistance capacity	Structural dominance	Subordination
8	Conflict	Complaints increase	No resolution system	Latent conflict
9	Governance	Weak institutions	Poor control	Escalation risk
10	Resistance	Emerging opposition	From latent to open	Threat to stability

Source: obtained from primary data (2025)

The findings show that shipbuilding industry development in Batupute Village has driven coercive and unequal social transformation. Rather than fostering inclusive growth, industrialization has reconfigured local social structures in ways that tend to marginalize



community voices and weaken traditional forms of social organization. Industrial expansion has shifted communal social structures toward fragmentation while degrading shared social spaces due to pollution and intensified industrial activities (Denzin & Lincoln, 2018; Harvey, 2005). Areas that once functioned as centers of interaction, cooperation, and cultural exchange are increasingly disrupted, limiting opportunities for social engagement and collective life.

As a consequence, social interactions have declined significantly, reflecting not a voluntary adaptation but structural pressures imposed by external forces. Community members are not simply choosing new ways of life; rather, they are compelled to adjust to conditions shaped by industrial dominance. This situation illustrates how development processes can impose constraints on local agency, reducing the ability of communities to shape their own social and economic trajectories. In line with structuration theory, these dynamics reveal the dominance of structure over agency, where institutional arrangements, economic interests, and power hierarchies limit the capacity of individuals and communities to act independently (Giddens; Creswell & Poth, 2018).

Communities in Batupute Village experience forced adaptation due to unequal power relations, particularly between industrial actors, the state, and local residents. Decision-making processes are largely controlled by actors with greater economic and political resources, leaving local communities with minimal participation or influence. This imbalance reinforces patterns of exclusion, where development priorities are determined without adequately considering local needs, values, or knowledge systems. As a result, community members often find themselves navigating changes they neither initiated nor fully understand, further deepening their sense of marginalization.

Moreover, the intrusion of industrial activities into private and social life has contributed to a noticeable decline in quality of life. Noise, pollution, and the constant presence of industrial operations disrupt daily routines, including rest, family interactions, and even religious practices. The boundary between public industrial space and private life becomes increasingly blurred, creating a sense of discomfort and loss of control over one's own environment. These conditions not only affect physical well-being but also have psychological and emotional impacts, as individuals struggle to cope with rapid and imposed changes.

At the same time, weak governance structures and ineffective conflict resolution mechanisms exacerbate these challenges. The lack of transparency, accountability, and consistent regulatory enforcement allows industrial activities to continue with limited oversight. This institutional weakness reduces public trust and creates a perception that authorities prioritize economic interests over community welfare. Consequently, dissatisfaction among residents continues to grow, often expressed through informal complaints or passive resistance.



Such dissatisfaction, however, does not always manifest in open confrontation. Instead, it often remains as latent conflict, embedded within everyday interactions and social relations. Without adequate channels for dialogue and negotiation, these tensions risk escalating into more visible and potentially disruptive forms of conflict (Kurniawan et al., 2023; Bebbington et al., 2024). The persistence of these unresolved issues highlights the fragility of the current development model. Overall, the development of the shipbuilding industry in Batupute Village reflects a pattern of non-participatory and unsustainable development. The dominance of structural forces, combined with weak governance and limited community involvement, has produced outcomes that undermine social cohesion, reduce quality of life, and increase vulnerability. These findings emphasize the urgent need for more inclusive, participatory, and equitable development approaches that recognize and strengthen community agency while ensuring environmental and social sustainability.

3. Ecological Degradation and the Vulnerability of Coastal Communities

From an environmental viewpoint, the expansion of shipbuilding facilities has significantly reshaped coastal land use, particularly through the transformation of mangrove forests and aquaculture areas into industrial sites. This shift has contributed to ecological decline and reduced fishery productivity (Argarani et al., 2025). As a result, communities that rely on these ecosystems for their livelihoods face increasing uncertainty and heightened exposure to environmental threats.

Moreover, industrial activities place additional stress on the surrounding environment through emissions, pollution, and the accumulation of waste. These conditions not only degrade natural systems but also have direct consequences for human health, including complaints such as skin irritation and respiratory difficulties among local residents (Li et al., 2024). This demonstrates how environmental damage extends beyond ecosystems to affect everyday life.

From a political ecology perspective, such outcomes are closely tied to imbalances in authority and resource control. Government bodies and corporate actors tend to hold dominant positions, often prioritizing economic expansion over ecological sustainability and social fairness. Consequently, local communities disproportionately experience the negative environmental impacts, highlighting the unequal distribution of both risks and benefits associated with industrial development (Bebbington et al., 2024).

Table 2.

Analysis of Ecological Degradation Caused by Coastal Industrialization

No	Ecological Aspects	Research Findings	Researcher's Analysis	Environmental Impact
1	Land Use Change	Mangroves and ponds converted	Shift to extractive industry	Loss of ecological functions
2	Mangrove Degradation	Ecosystem damage	Weakened protection & habitat	Erosion, flooding, biodiversity loss
3	Fishery Decline	Reduced fish catch	Food chain disruption	Lower fishermen income
4	Vulnerability	Increased coastal risks	Cumulative exploitation impact	Threat to settlements
5	Pollution	Emissions & heavy metals	Weak management & oversight	Declining air & water quality

Source: obtained from primary data (2025)

Table 2 illustrates that socio-ecological dynamics in coastal areas are shaped not only by environmental degradation but also by deeper structural issues such as governance crises, unequal power relations, and the marginalization of local communities. These interconnected challenges demonstrate that environmental problems cannot be understood in isolation, as they are closely linked to institutional weaknesses and social inequalities. In this context, environmental degradation becomes both a cause and a consequence of broader socio-political dynamics that influence how resources are managed and who benefits from development.

In terms of health impacts, the findings reveal a growing number of cases involving skin irritation and respiratory problems among local residents. These conditions are closely associated with prolonged exposure to pollution and poorly managed industrial waste. Such evidence indicates that environmental degradation has evolved into a significant public health threat, directly affecting the well-being and quality of life of coastal communities. The deterioration of air and water quality not only disrupts daily activities but also increases long-term health risks, particularly for vulnerable groups such as children and the elderly. As one informant noted, "Now my skin often feels itchy, and at night it's hard to breathe because the air feels dirty." (Interview with SR, June 2025).

Weak governance further exacerbates these conditions, as reflected in the absence of effective oversight and regulatory enforcement. This situation points to institutional failure in controlling industrial activities and ensuring compliance with environmental standards. Without strong governance mechanisms, environmental damage continues unchecked, allowing harmful practices to persist. The lack of accountability and transparency creates a situation in which industrial actors can operate with minimal restrictions, often prioritizing economic gains over



environmental protection. This concern is emphasized by an informant who stated, "There has never been any clear oversight; the industry just keeps going..." (Interview with AM, May 2025). Power imbalances also play a critical role in shaping socio-ecological outcomes in coastal areas. State and corporate actors tend to dominate resource control and decision-making processes, leaving local communities with limited influence. This top-down approach excludes communities from meaningful participation, reducing their ability to voice concerns or advocate for their rights. As a result, development processes often fail to reflect local needs and priorities. A fisherman highlighted this exclusion by stating, "We were never consulted..." (Interview with NL, June 2025).

Moreover, environmental injustice is evident in the unequal distribution of benefits and burdens associated with industrial development. While economic benefits are concentrated among powerful actors, local communities are left to bear the environmental and social costs. This imbalance creates socio-ecological inequality and fosters dissatisfaction among affected populations. As expressed by one informant, "We haven't benefited much..." (Interview with HL, June 2025).

Finally, the marginalization of local knowledge further weakens traditional environmental management practices that have historically supported sustainability. The erosion of these practices reduces community resilience and limits adaptive capacity in the face of environmental change. Overall, these findings highlight that environmental degradation, weak governance, and power inequality are deeply interconnected, collectively increasing community vulnerability and posing significant challenges to long-term sustainability.

Discussion

This section offers a critical reading of the growth of the shipbuilding industry in Batupute Village using lenses from development theory, political ecology, and structuration. The results indicate that coastal industrialization cannot be viewed as a purely neutral or technical undertaking. Instead, it is influenced by unequal power relations, uneven sharing of benefits, and intertwined social and environmental consequences that shape realities within the community.

1. Marginalization of Participation and Structural Power Inequality

The study reveals that community involvement during the planning phase of development remains minimal. Opportunities for accessing information are restricted, and forums for public discussion are largely absent, indicating weaknesses in transparency and accountability. This situation is consistent with the argument of (Kurniawan et al., 2022), which notes that "the absence of participatory mechanisms in development planning often leads to legitimacy deficits and weak public trust toward development outcomes."



Viewed through the lens of structuration theory, this pattern reflects the strong influence of structural forces over individual or collective agency. Institutional arrangements—such as government regulations, policy frameworks, and the economic dominance of powerful actors—tend to constrain meaningful community engagement. As highlighted by (Giddens, 1984), “structures both constrain and enable action, but in unequal contexts, they tend to reproduce domination.” This suggests that existing systems often reinforce unequal power relations rather than creating space for inclusive participation.

In line with this, (Creswell & Poth, 2018) argue that marginalized groups frequently lack access to the resources required to influence decision-making processes. This perspective helps explain why communities in Batupute have limited control over both authoritative and material resources, further reducing their capacity to shape development outcomes.

From a political ecology standpoint, these conditions point to a model of development that prioritizes capital accumulation over social equity and environmental sustainability. As noted (Bebbington et al., 2024), “resource-based development often privileges capital accumulation while marginalizing local communities and ecological sustainability.” Consequently, industrial expansion in coastal areas tends to follow a top-down pattern, excluding local voices and producing unequal outcomes.

The findings of this research underline that development should not be seen purely as an economic activity but as a process deeply influenced by power distribution. When participation is limited, the consequences often include social inequality, environmental decline, and the emergence of conflict, highlighting the importance of more inclusive and accountable governance practices.

2. Social Transformation and Disruption of Community Life

Industrial expansion in Batupute Village has brought notable shifts in the social fabric of the community. The deterioration of shared spaces—driven by pollution and continuous industrial operations—has reduced the intensity and quality of social interaction, contributing to growing fragmentation among residents. This reflects the argument of (Denzin & Lincoln, 2018) that “changes in physical environments directly reshape social relations and interaction patterns within communities.” In this case, environmental transformation has directly altered how people relate to one another in everyday life.

The situation also reveals a pattern of enforced adjustment, where communities are compelled to accommodate conditions imposed by external forces. This highlights an imbalance of power, as residents have limited capacity to influence or reject the changes affecting their environment. In line with this, it is argued that “capitalist development reorganizes social space in ways that



prioritize production over social well-being,” suggesting that economic objectives often take precedence over the quality of life of local populations.

Furthermore, the reach of industrial activities into private domains—evident in disruptions to household routines and religious practices—points to insufficient regulatory control and weak institutional oversight. These disturbances indicate that industrial operations have extended beyond public or economic spaces into areas traditionally reserved for personal and communal life. As a consequence, overall living conditions have declined, affecting both physical comfort and social well-being.

At the same time, dissatisfaction among residents continues to build as the negative effects of industrialization accumulate. Although this discontent may not always be expressed openly, it signals the presence of underlying tensions. As noted by (Scott, 1985), “when formal channels of resistance are closed, subordinate groups tend to develop everyday forms of resistance.” This perspective is relevant to the Batupute context, where communities begin to exhibit subtle forms of opposition in response to persistent structural pressures. Supporting this, (Kurniawan et al., 2023) highlight that “industrialization without strong social governance mechanisms increases the likelihood of local conflict,” emphasizing the risks associated with weak institutional frameworks.

In sum, the social changes observed in Batupute Village are not the result of organic or voluntary processes. Instead, they stem from structural forces that have disrupted social cohesion, fragmented community relationships, and lowered the overall quality of life.

3. Ecological Degradation and Vulnerability of Coastal Communities

From an environmental perspective, shipbuilding expansion has reshaped coastal land use, particularly through the conversion of mangroves and aquaculture areas into industrial zones. This transformation has increased coastal erosion, reduced biodiversity, and lowered fishery productivity. As stated by (Argarani et al., 2025), “mangrove degradation significantly reduces coastal resilience and undermines the livelihoods of fishing communities.” Industrial activities also generate pollution and hazardous waste, including heavy metals, which harm environmental quality and public health. (Li et al., 2024) notes links to respiratory and skin diseases. From a political ecology view, these impacts reflect environmental injustice and weak governance.

Conclusion

Overall, the findings show that the growth of the shipbuilding industry in Batupute Village brings not only economic activity but also complex social, political, and environmental challenges. Community participation in development remains very limited, with restricted access to information, weak transparency, and minimal public involvement in decision-making. As a result, power is largely concentrated in government and corporate actors, while local



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communities have little influence. This imbalance weakens the legitimacy of development and may trigger future social tensions.

Industrial expansion has also reshaped daily life. Pollution, noise, and intensive activities have damaged shared spaces and reduced social interaction, leading to declining social cohesion. Communities are forced to adapt to conditions they did not choose, which lowers their quality of life and increases dissatisfaction. Over time, this situation creates hidden tensions that may develop into open conflict if not properly managed.

Environmentally, the impacts are significant. The conversion of mangroves and fishponds has reduced fishery productivity and increased vulnerability to environmental risks. Pollution and industrial waste also threaten public health, showing weak environmental governance. From a political ecology perspective, these conditions reflect unequal power relations, where economic interests are prioritized over environmental sustainability and social justice. Therefore, more inclusive and sustainable development approaches are needed.

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