



Research Article

Between Enforcement and Compliance: Navigating Regulatory Gaps and Local Realities in the Governance of Mini Trawl Fishing in West Aceh's Coastal Waters

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Abstract

This study examines the institutional strategies and challenges in supervising the use of mini trawl fishing gear in West Aceh, Indonesia. Despite the existence of regulatory frameworks banning mini trawls due to their destructive ecological impact, enforcement remains inconsistent and fragmented. Using a qualitative descriptive approach, data were collected through interviews, observations, and document analysis involving key agencies such as the Marine and Fisheries Office (DKP), Satwas SDKP, Water Police, and Navy. The findings reveal that institutional coordination is weak, with overlapping roles, limited patrol resources, and inadequate personnel training, all of which hinder effective supervision. Enforcement efforts vary across institutions, ranging from education-based approaches to legal prosecution. However, community compliance remains low due to economic dependency on mini trawls, lack of alternative livelihoods, and minimal engagement in regulatory processes. This gap between enforcement and compliance reflects broader regulatory and governance challenges. The study concludes that improving supervision effectiveness requires integrated inter-agency collaboration, enhanced field capacity, community-based monitoring, and policy approaches that balance ecological sustainability with socioeconomic realities. These findings contribute to the discourse on sustainable fisheries governance in Indonesia and offer practical insights for policymakers and local institutions to improve marine resource protection at the community level.

Keywords: fisheries governance, mini trawl fishing, institutional supervision, community compliance, marine resource management

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Introduction

Indonesia, as the world's largest archipelagic country, possesses abundant marine resources spread across its territorial waters and exclusive economic zone. These resources play a significant role in national development and local economies, particularly in coastal communities that rely heavily on fisheries for their livelihoods (Nataliana et al., 2023). However, the sustainable management of fisheries remains a challenge due to overfishing, habitat degradation, and the persistent use of illegal or destructive fishing gear. One such gear, the mini trawl (locally known as "pukat harimau" or cantrang), continues to be used despite regulatory bans.

The Indonesian government has enacted multiple policies to prohibit the use of destructive fishing gear, particularly bottom trawls and seine nets, due to their detrimental impact on benthic ecosystems and juvenile fish populations (Sapriani et al., 2021). Regulation No. 2/PERMEN-KP/2015 by the Ministry of Marine Affairs and Fisheries explicitly bans such equipment in Indonesian waters. Nevertheless, enforcement remains inconsistent, and fishermen often continue to use these gears due to economic pressures and lack of viable alternatives (Sutrisno, 2019).

In coastal areas such as West Aceh Regency, the use of mini trawls has persisted, raising concerns about long-term ecosystem degradation and declining fish stocks. Effective supervision is essential to mitigate environmental damage, yet existing monitoring systems suffer from limited human resources, insufficient patrol vessels, and gaps in inter-agency coordination (Arwansa et al., 2024). A comprehensive understanding of local enforcement strategies is therefore necessary to evaluate the effectiveness of current practices.

Although policies have been enacted at the national level, local implementation has encountered resistance from fisher communities. In some cases, fishers perceive bans on mini trawls as unfair and detrimental to their livelihoods, especially when alternative gears are less efficient or more costly

(Kismartini et al., 2019). These tensions have resulted in policy traps, where regulatory efforts are undermined by stakeholder conflicts and inadequate communication. Addressing these concerns requires a participatory approach that considers both environmental sustainability and socioeconomic realities.

Academic research has highlighted the importance of community engagement and integrated coastal management as pillars for improving compliance with fishing regulations. Local knowledge, if properly integrated into enforcement mechanisms, can serve as a valuable resource for identifying violations and promoting sustainable practices (Shahnaz & Syaprillah, 2022). In addition, empowering traditional communities with legal and institutional support can help foster stewardship and accountability over marine resources.

Despite the growing body of literature on sustainable fisheries and regulation, few studies have explored the operational challenges faced by local enforcement units in Aceh Province. This research seeks to fill that gap by investigating the strategic role of DKP and associated agencies in monitoring mini trawl usage in West Aceh. The study focuses on the coordination between agencies, resource allocation, and effectiveness of patrol efforts as key indicators of regulatory performance.

Ultimately, this study aims to contribute to the discourse on sustainable marine resource governance by highlighting both institutional constraints and opportunities for improvement. Understanding the dynamics of gear supervision at the local level is essential to strengthen enforcement, align policy with practice, and ensure the long-term health of Indonesia's marine ecosystems (Pribadi et al., 2025). As such, the findings are expected to inform future interventions aimed at harmonizing ecological objectives with the economic needs of fishing communities.

Methods

This study employed a qualitative descriptive approach to examine the strategies used by relevant authorities in supervising the use of mini trawl fishing gear in West Aceh Regency. Data were collected through direct observation, in-depth interviews with key informants (including personnel from the Department of Marine and Fisheries, Satwas SDKP, Water Police, Navy Post Meulaboh, and local fishers), and documentation analysis. Informants were selected using purposive sampling based on their relevance to the study objectives. Data validation was ensured through triangulation of sources, while analysis followed the Miles and Huberman model: data reduction, data display, and conclusion drawing. The research site was chosen due to the prevalence of illegal fishing practices and accessibility for continuous fieldwork, with all ethical considerations duly observed.

Results and Discussion

Institutional Challenges in Supervising Mini Trawl Gear

The institutional supervision of mini trawl fishing gear in West Aceh Regency involves multiple government actors, yet operational coordination remains limited. Each agency—DKP, Satwas SDKP, water police and TNI AL—carries out supervision based on their respective mandates, but overlap and unclear communication often delay rapid responses to violations. During field observations, it was noted that many violations occur in remote coastal zones where supervision rarely reaches. Informants from DKP admitted that while regular patrols are scheduled, many are not executed as planned due to logistical constraints. The coordination meeting between agencies is conducted only once per quarter, which limits the ability to adapt to urgent or seasonal violations. Moreover, the use of manual reporting systems makes data sharing between agencies inefficient. This situation hinders the establishment of an integrated enforcement strategy across West Aceh's maritime territory.

The number of field personnel allocated for fisheries supervision is insufficient to cover the geographic area of concern. Based on interview data, DKP only has six officers assigned to marine surveillance, while SDKP operates with a team of five. Meanwhile, the Water Police and Navy rely on a rotating crew, who are often pulled into other operational duties beyond fisheries. Informants expressed concern that the current ratio between officers and coverage area is far from ideal. Patrols only reach a fraction of the coastline, leaving major portions unsupervised for weeks. These gaps provide space for unmonitored fishing activity using banned gear like mini trawl. The fishers, knowing the predictable patrol schedules, often exploit unsupervised zones to continue their activities.

Another key issue lies in the lack of patrol infrastructure, particularly surveillance boats and communication equipment. The agencies involved currently share one operational speedboat, which is in frequent need of repair. Interviews with SDKP staff revealed that limited fuel budgets often cause patrols to be canceled. Even when patrols do proceed, engine problems and outdated navigation tools reduce the patrol's efficiency and safety. Officers also complained about the absence of radar systems and GPS tracking, which are essential for night operations or coverage in bad weather. Without adequate equipment, the patrols are often reactive rather than proactive. These limitations make it nearly impossible to maintain consistent monitoring in high-risk zones.

The training and competency of field officers further compound the institutional challenges in supervision. Based on interviews with senior staff, most officers have not received specialized training in fisheries law enforcement. Their background varies from administrative roles to general marine duties, and only a few have attended national-level technical workshops. Consequently, many field decisions are based on individual judgment rather than standardized operational procedures. This inconsistency affects how violators are treated and weakens the legal follow-up process. Some officers admitted uncertainty in interpreting legal

documents or enforcing sanctions properly. This not only diminishes institutional credibility but also creates space for negotiation or leniency in the field.

Interviews with fishers revealed their awareness of institutional fragmentation, which some openly admitted to exploiting. Fishers reported being warned by one agency only to receive no follow-up from another. This inconsistency leads to a perception that enforcement is negotiable, especially in the absence of written citations or follow-up penalties. Some fishers stated that they “only need to avoid the DKP boat,” implying that supervision is uneven across agencies. This highlights a deeper issue of role ambiguity, where each institution assumes others are taking full responsibility. The lack of standardized enforcement action across agencies undermines deterrence and diminishes the impact of patrols.

Administrative documentation further illustrates the weaknesses in institutional response. Patrol logbooks, upon review, showed discrepancies between planned and actual patrol activities. While monthly schedules appear robust, execution reports suggest that only 50–60% of planned missions are realized. Reasons cited include poor weather, engine trouble, and human resource limitations. However, the lack of formal internal evaluations or audits allows these performance gaps to persist without correction. There is also a notable absence of data analytics in reporting, meaning trends in violations are not used to guide future planning. Without data-driven decision-making, supervision efforts remain rigid and repetitive.

Budget allocation for supervision activities is consistently low compared to the scale of the problem. Interviews with DKP administrative staff revealed that the annual budget for surveillance is often absorbed by routine maintenance and personnel allowances. As a result, there is minimal room for equipment upgrades or recruitment of specialized staff. Despite requests for additional resources submitted to provincial offices, bureaucratic procedures delay approvals. In some years, emergency funds are needed just to maintain a single patrol boat in working

condition. This financial dependency limits the autonomy of regional offices in responding to emerging threats. Institutional agility is thus compromised by rigid and insufficient funding structures.

Overall, the institutional framework for fisheries supervision in West Aceh appears to be in place but is not yet operationally effective. The challenges are deeply structural—spanning from lack of infrastructure and under-trained personnel to poor inter-agency coordination and limited financial support. The result is a system that operates below its intended capacity, allowing violations to occur repeatedly without meaningful consequence. These conditions contribute to a pattern of ineffective deterrence that further erodes trust in regulatory agencies. Unless major reforms are undertaken, including improved training, increased resources, and integrated operations, the current supervisory system will continue to underperform. Stronger institutional will and more responsive governance mechanisms are required to safeguard marine ecosystems from further degradation.

Enforcement Strategies and Community Compliance

The enforcement of mini trawl regulations in West Aceh follows a mixed approach that combines soft education-based measures and hard legal actions. Field data show that DKP and SDKP primarily rely on pre-emptive strategies such as outreach campaigns and informal counselling. Officers often visit local fishers at docks and fish markets to remind them of prohibited gear and environmental concerns. Leaflets and posters are sometimes distributed, although informants admitted these materials are limited in quantity. Community meetings are held every few months but suffer from low attendance, especially among younger fishers. This suggests that awareness campaigns are not yet fully embedded within fishing culture. The existing methods have some reach, but their influence on behaviour change remains limited.

Meanwhile, the water police and TNI AL adopt more assertive enforcement strategies that include deterrence and legal action. Based on patrol reports, they regularly inspect fishing vessels and confiscate prohibited gear when discovered. Interviews with field officers confirmed that written warnings are issued for first-time violators, while repeat offenders face administrative sanctions or potential prosecution. Some cases are handed over to the district attorney, although the legal process often takes months. In one documented instance, a fisher was fined and had their net destroyed publicly as a deterrent for others. However, many cases do not reach court due to lack of evidence, procedural gaps, or informal settlements. These inconsistencies reduce the perceived risk of punishment among the fishing community.

Despite formal procedures, the enforcement process is often hampered by community resistance and economic realities. Many fishers depend on mini trawl gear because it offers higher and faster yields compared to legal alternatives. Interviews revealed that several fishers view the ban as unrealistic, especially when no subsidies or replacement gears are provided. Some admitted switching to mini trawls during off-season months to meet financial needs. Officers also reported that fishers often modify gear appearances to evade detection, blurring the line between legal and illegal tools. This constant cat-and-mouse dynamic creates tension between communities and enforcement officers. As a result, compliance remains situational and often temporary.

A significant obstacle to enforcement is the lack of viable alternative livelihoods. While the government has promoted the use of environmentally friendly fishing gear, few fishers have received support to transition. Several informants expressed frustration that promises of aid and training programs have not materialized. Others cited poor design and inefficiency of the new gear, making it unsuitable for the local ecosystem or market demand. Without tangible alternatives, the push for compliance is seen as punitive rather than developmental.

Community leaders interviewed emphasized the need for solutions that balance ecological protection with economic survival. This highlights the importance of coupling regulation with empowerment programs.

Another concern is the lack of consistent community engagement in designing and implementing fisheries policies. Most fishers feel excluded from the regulatory process and view it as top-down and disconnected from local realities. Interviews revealed that consultation meetings are rarely held at the village level, and when they are, the information is often one-directional. This alienation breeds distrust and fosters non-cooperation. Fishers perceive regulations as benefiting the state rather than the people who depend on the ocean. Building community ownership of conservation goals is crucial to improving long-term compliance. Without this, enforcement will continue to face passive resistance and occasional sabotage.

Some promising practices have emerged, particularly in villages where local leaders act as intermediaries. In one coastal hamlet, a retired fisher now serves as a liaison between DKP and the community, facilitating two-way communication. His role includes translating regulations into practical advice and mediating disputes when violations occur. Field notes suggest that areas with such figures report fewer conflicts and higher levels of voluntary compliance. This indicates the potential of community-based enforcement models as complementary to formal supervision. Empowering local actors can provide social legitimacy and reduce friction during patrol operations. However, such initiatives remain isolated and need broader institutional support.

Inter-agency coordination is also vital for effective enforcement, yet remains weak in practice. Although joint patrols are conducted, interviews revealed that communication across agencies is often limited to logistical arrangements. There is no unified reporting platform, leading to gaps in monitoring and follow-up. Officers from one agency are often unaware of the outcomes of cases handled by another. This fragmentation results in duplicative efforts in some areas and neglect in others.

A centralized case tracking system could help streamline enforcement actions and ensure continuity. Institutional cohesion would significantly enhance the credibility and reach of enforcement strategies.

In conclusion, while enforcement mechanisms exist in West Aceh, their effectiveness is uneven and heavily dependent on local dynamics. The tension between regulatory objectives and community realities complicates the path to compliance. Educational outreach must be intensified, legal actions made more consistent, and economic alternatives provided to encourage sustainable transitions. Community participation and local leadership should be integrated into enforcement frameworks to bridge gaps between institutions and society. Without a holistic approach, enforcement will remain reactive, limited in scope, and insufficient to protect the long-term health of coastal fisheries.

Conclusion (12pt, bold)

This study examined the strategies and challenges faced by multiple institutions in supervising the use of mini trawl fishing gear in West Aceh Regency. The findings reveal that while a regulatory framework and enforcement mechanisms are in place, their implementation remains largely ineffective due to institutional fragmentation, limited infrastructure, and insufficient human resources. Patrol activities are constrained by budget limitations, inadequate equipment, and lack of specialized training among field officers. Furthermore, inconsistent coordination between agencies has weakened the collective impact of supervision efforts.

On the ground, enforcement strategies vary in intensity, with some institutions focusing on education and soft approaches while others rely on deterrence and legal punishment. However, community compliance remains low, driven by economic dependency on mini trawls, lack of viable alternatives, and perceived exclusion from decision-making processes. The gap between policy and practice, as well as between state and society, continues to hinder sustainable fisheries

governance in the region. Addressing these issues requires not only stronger enforcement but also meaningful community engagement, economic support, and institutional reform.

References

- Adhitama, I., Amanwinata, R., & Affandi, H. (2018). Implementasi kebijakan pelarangan penggunaan alat penangkapan ikan pukat hela (trawls) dan pukat tarik (seine nets) di Wilayah Pengelolaan Perikanan Negara Republik Indonesia. *Jurnal Pembangunan dan Kebijakan Publik*, 8(2), 7-18. <https://journal.uniga.ac.id/index.php/JPKP/article/view/278>
- Arwansa, A., Serdiati, N., & Sulistiawati, D. (2024). Supervision and control of fisheries resources in illegal fishing activities in Central Sulawesi (Case Study at WPPNRI 713). *Mitra Sains*, 12(1), 69-80. <https://doi.org/10.22487/ms26866579.2024.v12.i1.pp69-80>.
- Babo, J., & Rompas, W. (2017). Pengawasan Dinas Perikanan terhadap aktivitas illegal fishing Kabupaten Banggai Laut. *Jurnal Administrasi Publik*, 4(48). <https://ejournal.unsrat.ac.id/index.php/JAP/article/viewFile/17604/17133>
- Gabriella, N., Putri, J., & Moenta, A. P. (2021). Analisis penegakan hukum perikanan tangkap. *Jurnal Petitum*, 9, 88-99. <https://uit.e-journal.id/JPetitum>
- Kismartini, Purnaweni, H., & Saputra, S. (2019). Indonesian fishing policy trap. *Proceedings of the International Conference on Maritime and Archipelago (ICoMA 2018)*. <https://doi.org/10.2991/icoma-18.2019.26>.
- Mirza, A. M., Irma, A., Nasution, S., Sembiring, Y. B., & Suwarno, P. (2021). Peran PSDKP Lampulo dalam pengawasan dan penanganan kasus destructive fishing di perairan Aceh pada masa pandemi COVID-19. *Jurnal Education and Development*, 9(3), 40-46.
- Nataliana, E., Yusnaldi, Asih, B., Yulianto, Widodo, P., Juni, H., Saragih, R., & Suwarno, P. (2023). Government efforts in realizing legal, reported and regulated capture fisheries in Indonesia. *International Journal of Humanities Education and Social Sciences (IJHESS)*, 2(4). <https://doi.org/10.55227/ijhess.v2i4.379>.
- Ngarasati, S. A., Supartono, S., & Fajariyah, N. (2020). Resolusi konflik kebijakan pelarangan alat tangkap ikan jenis cantrang di Kota Tegal. *Jurnal Dialog Refleksi Konflik*, 79-106. <http://jurnalprodi.idu.ac.id/index.php/DRK/article/view/500>
- Nomor, V. (2019). Penegakan hukum dalam tindak pidana perikanan. *Law Review*, 1(April), 1-12.
- Novita, O. (2021). Implementasi pengawasan perikanan tangkap berdasarkan hukum positif. *Jurnal Ilmiah Dunia Hukum*, 4(April), 70-94. <http://jurnal.untagsmg.ac.id/index.php/duniahukum/article/view/2004/145>

3

- Pakaila, B. (2019). Pengawasan bantuan alat tangkap nelayan di Kabupaten Raja Ampat. *Jurnal Airaha*, 10(2), 47-56.
- Pribadi, T. D. K., Yusfiandayani, R., Simbolon, D., Patanda, M., Caesario, R., Sayidina, E. J., & Violita, S. R. (2025). A comparison of diversity and catch composition of mini trawl (arad) and lift net (bagan) in Cilincing, Jakarta Bay, Indonesia. *Biodiversitas*, 25(1), 265-277. <https://doi.org/10.13057/biodiv/d260127>.
- Sapriani, Wiwoho, J., & Handayani, I. (2021). Sustainable fisheries principles in fisheries management regulation in Indonesia. *Proceedings of the International Conference on Environmental and Energy Policy (ICEEP 2021)*. <https://doi.org/10.2991/assehr.k.211014.045>
- Shahnaz, L., & Syaprillah, A. (2022). Legal management of natural resources in the coastal region of Indonesia. *IOP Conference Series: Earth and Environmental Science*, 1083(1), 012034. <https://doi.org/10.1088/1755-1315/1083/1/012034>
- Sutrisno, E. (2019). The legal problem of using non-environmentally friendly fishing gear in the fisher community of Indonesia. *Eurasian Journal of Biosciences*, 13, 2105-2109.
- Syaputra, J., & Siregar, E. S. (2021). Pelaksanaan pengawasan terhadap nelayan pukat harimau oleh Dinas Kelautan dan Perikanan (DKP) Batu Bara. *Citra Justicia: Majalah Hukum dan Dinamika Masyarakat*, 22(2), 52-61. <https://doi.org/10.36294/cj.v22i2.223>