



Challenges in Law Enforcement on the Use of Arad Fishing Gear by Fishermen

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Abstract

Introduction: This research is motivated by the still rampant use of arad fishing gear in Cilacap Waters, as indicated from the 2024 Annual Report of the Cilacap Ocean Fishing Port. Although it is prohibited by Law Number 45 of 2009 because it damages marine ecosystems, the factors that encourage fishermen to use it and the effectiveness of law enforcement still need to be further researched.

Purposes of the Research: This study aims to analyze the effectiveness of law enforcement of the use of arad in Cilacap waters by the Directorate General of Marine Resources and Fisheries Supervision of Cilacap based on Law Number 45 of 2009 and the Regulation of the Minister of Marine Affairs and Fisheries, as well as identify the factors that cause fishermen to still use it.

Methods of the Research: This study uses an empirical juridical method with an analytical descriptive approach. Data were collected through interviews and observations with the Directorate General of Marine Resources and Fisheries Supervision of Cilacap and fishermen, and were analyzed qualitatively.

Findings of the Research: The results show that law enforcement by the Directorate General of Marine Resources and Fisheries Supervision of Cilacap includes supervision, patrols, socialization, and confiscation of fishing gear. However, it was found that the level of compliance of fishermen is still low. The main factors that cause fishermen to continue using arad are livelihood dependence, higher catches, and the cost of switching fishing gear.

Keywords: Law Enforcement; Arad; Marine and Fisheries Resources Supervision.

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INTRODUCTION

Indonesia is the largest archipelagic country in the world. The area of Indonesian waters, including territorial waters and inland waters, is approximately 2.7 million square kilometers.¹ Having a very large area of waters, Indonesia has diverse natural resources, which allow the Indonesian state to produce a lot of fish in the waters, it is not surprising that legal problems regarding illegal fishing in the waters continue to exist.² The term illegal fishing refers to a criminal act in the fisheries sector. The practice of illegal fishing is not only seen from the way of catching fish that violate the rules, but also from the tools for catching the fish itself, whether or not it is in accordance with existing regulations to maintain the sustainability of the ecosystem in the sea.³ The criteria of environmentally safe fishing technology such as: a) Safe for fishermen to use, b) High-quality production, c) Consumer-safe products, d) Not many fish thrown away, e) Avoiding catching protected species, f)

¹ Muhammad Darwis, *Hukum Laut Dalam Konsepsi Hukum Indonesia*, ed. Mohammad (Suska Press, 2015), p.31

² Muhammad Rafi and Muhammad Syaferi, "Strategi Pemberantasan Praktik Penangkapan Ikan Secara Ilegal Di Wilayah Laut Indonesia," *Jurnal Hukum Ius Quia Iustum* 30, no. 1 (2023): 138–58, <https://doi.org/10.20885/iustum.vol30.iss1.art7>.

³ Sandi Yudha Prayoga, "Pertanggungjawaban Pidana Korporasi Dalam Tindak Pidana Penangkapan Ikan Secara Ilegal (Illegal Fishing)" *University Of Bengkulu Law Journal* 6, no. 1 (2021): 1–19, <https://doi.org/10.33369/ubelaj.6.1.1-19>.

Environmentally friendly.⁴ Fish fishing equipment that is outside of those criteria, one of them is arad. Arad is one type of Fishing Gear that damages the environment. Arad belongs to the group of hela trawlers, or, more specifically, the boarded basic hela trawls. There are also those who classify arad into one type of small-size *bottom trawl* fishing gear, known as mini *bottom trawl*.⁵ Arad is in the form of a net-eyed pocket that narrows at the end and is operated by sweeping the bottom of the water, so that it can damage fish habitats and resources in the waters.

The use of fishing gear that is harmful to marine ecosystems is expressly considered unlawful, and can be subject to criminal and administrative penalties, regulated in Law Number 45 of 2009 concerning Fisheries.⁶ The enforcement of the law on the use of prohibited fishing gear is contained in Law Number 45 of 2009 concerning Fisheries in article 9 paragraphs (1) and (2) which reads: 1). Every person is prohibited from possessing, possessing, carrying, and/or using fishing gear and/or fishing aids that interfere with and damage the sustainability of fish resources on fishing vessels in the fisheries management area of the Republic of Indonesia; 2). Provisions regarding fishing gear and/or fishing aids that interfere with and damage the sustainability of fish resources as intended in paragraph (1) are regulated by Ministerial Regulation.

Article 85 regarding the criminal punishment if it violates the rules, namely, imprisonment for a maximum of 5 (five) years and a maximum fine of IDR 2,000,000,000.00 (two billion rupiah). Strengthened by the Regulation of the Minister of Maritime Affairs and Fisheries Number 71 of 2016 concerning Fishing Routes and Placement of Fishing Gear in the State Fisheries Management Area of the Republic of Indonesia, the prohibition of the use of destructive arad and criminal sanctions for those who violate it have been strictly regulated. On the other hand, according to data from the Ministry of Maritime Affairs and Fisheries on the Annual Report of the Cilacap Ocean Fishing Port in 2024 and direct field research in 2026 in Cilacap, it shows that there are still many uses of arad, which is used by fishermen to catch fish in Cilacap waters, which amounts to 363 fishermen who still use arad to catch fish based on the data of the report.⁷

Based on positive law in Indonesia, it states that the use of arad fishing gear is prohibited. Law enforcement in the fisheries sector, especially against the use of prohibited arad, not only includes laws, but also practices in the field, ranging from supervision, enforcement, to judicial processes. Law enforcement such as the Marine Resources and Fisheries Supervisory, the police, and related agencies are responsible for patrolling, arresting, and investigating violations of the use of illegal fishing gear, especially arad.⁸ The Cilacap Marine Resources and Fisheries Supervisory, which is responsible for supervision and enforcement in the fisheries sector, is one of many law enforcement agencies in law enforcement over the use of arad in Cilacap waters. Law enforcement also pays attention to the criminal aspect. Criminal sanctions are expected to have a deterrent effect for

⁴ Yusuf Rohadi, Rini Hertati, and Muhammad Natsir Kholis, "Identifikasi Alat Tangkap Ikan Ramah Lingkungan Yang Beroperasi Di Perairan Sungai Alai Kabupaten Tebo Provinsi Jambi," *Jurnal Pengelolaan Sumber Daya Perairan* 4, no. 2 (2020), <https://doi.org/10.36355/semahjpsp.v4i2.459>.

⁵ Muhamad Hanif Yasyfi, Suteki, and Diah Wijaningsih, "Studi Kasus Konflik Antar Nelayan Akibat Penggunaan Arad Di Perairan Kecamatan Tegal Barat Kota Tegal," *Diponegoro Law Journal* 11, no. 71 (2022), <https://doi.org/10.14710/dlj.2022.31703>.

⁶ Faarkhaan Asrori et al., "Kajian Penanggulangan Tindak Pidana Perikanan Illegal Fishing Di Laut Natuna Dalam Perspektif Kriminologi," *Gema Keadilan* 8 (2021): 1-21, <https://doi.org/10.14710/gk.2021.12634>.

⁷ Kementerian Kelautan Perikanan, "Laporan Tahunan Pelabuhan Perikanan Samudera Cilacap Tahun 2024," 2025.

⁸ Atalia Parta, Trimurti Lumbantoruan, and Wiro Oktavius Ginting, "Studi Peran Pemerintah Pusat Dalam Menanggulangi Illegal Fishing: PSDKP Sebagai Instrumen Pengawasan Di Perairan Kota Sibolga," *Jurnal Pemerintahan Dan Politik* 10, no. 4 (2025): 725-40, <https://doi.org/10.36982/jpp.v10i4.5819>.

perpetrators and be a preventive effort to prevent similar violations from occurring.⁹ There are still many problems with the use of arad in Cilacap waters by fishermen, the research was carried out to analyze the enforcement of the law on the use of arad in Cilacap waters by the Cilacap Marine Resources and Fisheries Supervisory, by looking at Law Number 45 of 2009 concerning Fisheries, strengthened by the Regulation of the Minister of Maritime Affairs and Fisheries Number 71 of 2016 concerning Fishing Routes and Placement of Fishing Gear in the Fisheries Management Area of the Republic Indonesia, as the basis for law enforcement, and analyzed the factors that make fishermen still use arad in Cilacap waters.

METHODS OF THE RESEARCH

The empirical juridical method is used in this study, also known as field research, where the data for this study is obtained directly from the Cilacap Marine and Fisheries Resources Supervision and fishermen who use arad in Cilacap waters. Field research, also known as "field research", is a type of exploration that focuses on events and the environment because it allows researchers to collect data from the field or the real conditions where the event or phenomenon occurred.¹⁰ Descriptive analysis is used in this study, a research specification that aims to accurately describe events based on data.¹¹ In this writing, the data collection method used is interviews and observations. The interview aims to obtain in-depth information on law enforcement by the Cilacap Marine Resources and Fisheries Supervision and the factors that cause arad to still be used. Observation was carried out by looking at the field situation directly around Cilacap waters. Qualitative analysis was used to analyze the data in this study. The purpose of qualitative analysis is to gain a better understanding of how the implementation of the policy occurs and requires greater effort in analysis and research.¹²

RESULTS AND DISCUSSION

A. Law Enforcement of the Use of Arad in Cilacap Waters Based on Law Number 45 of 2009 concerning Fisheries

The Directorate General of Marine Resources and Fisheries Supervision is the executor of the Ministry of Marine Affairs and Fisheries which has the authority to design and implement policies related to the Supervision of Marine and Fisheries Resources Management. Supervision of Cilacap Marine and Fisheries Resources Management which is tasked with supervising the use of arad fishing gear in illegal fishing in Cilacap waters. Law Number 45 of 2009 concerning Fisheries is the basis for the current positive law enforcement. Regulation of the Minister of Maritime Affairs and Fisheries Number 71 of 2016 concerning Fishing Routes and Placement of Fishing Gear in the State Fisheries Management Area of the Republic of Indonesia, also strengthens the rules prohibiting the use of arad fishing gear.

According to Mr. Yogie Putranto as the Chairman of the Fisheries Resources Intelligence Working Team for the Supervision of Marine Resources and Fisheries Cilacap, in Cilacap waters,

⁹ Zubandi Furkon, Umar Natuna, and Muci Herliyanto, "Strategi Satuan Tugas PSDKP Natuna Dalam Menindak Pelaku Illegal Fishing Di Perairan Natuna Oleh Nelayan Asing Ditinjau Dari Hukum Pidana Islam," *Agileaner* 3, no. 2 (2025), <https://doi.org/10.56783/ja.v3i02.290>.

¹⁰ Syafrida Hafni Sahir, *Metodologi Penelitian*, ed. Try Koryati (Penerbit kbm Indonesia, 2022), p.6.

¹¹ Yusuf Tojiri, Hari Setia Putra, and Nur Faliza, *Dasar Metodologi Penelitian : Teori , Desain , Dan Analisis Data*, ed. Tonny Yuwanda (Takaza Innovatix Labs, 2024), p.50.

¹² Sugiyono, *Metode Penelitian Kuantitatif Kualitatif Dan R&D*, ed. Sutopo (Alfabeta, 2023), p.348.

arad fishing gear is usually often used by small fishermen with boats under 5 GT because it is considered easier to use and catch a lot of fish, in contrast to ordinary fishing gear. The use of fishing gear, including fishing gear, is prohibited, because it can harm the marine environment. Law enforcement of the use of arad carried out by the Cilacap Marine Resources and Fisheries Supervision is to carry out several forms of supervision, the first supervision is by inspecting the boat and fishing gear directly before the ship fishes. This inspection is carried out to ensure that the fishing technology used is based on regulations. A fishing vessel monitoring system with the *Vessel Monitoring System* (VMS), which operates electronically to monitor fishing vessels operating above 12 nautical miles, is used to conduct a second surveillance. When the fishing boat returns from fishing in the waters, a third surveillance is carried out. At this point, Cilacap Marine Resources and Fisheries Supervision officers inspect the catch and tools used by fishermen. There are fishermen with arads to catch fish in the waters. This supervision was effective because of the discovery of prohibited fishing equipment, especially arad. In addition to conducting direct supervision, according to Mr. Yogie Putranto as the Chairman of the Fisheries Resources Intelligence Working Team for the Supervision of Marine Resources and Fisheries Cilacap, the Marine Resources and Fisheries Supervision of Cilacap also collaborated with the Cilacap Regency Fisheries Service to stop the use of prohibited fishing gear. This coordination is carried out through socialization to the fishing community in several areas such as Kebumen Regency, Cilacap Regency, and Kutowaru Village Hall, where the majority of the population are fishermen. This socialization includes the use of arad and other fishing gear to reduce violations and prevent conflicts between fishermen. Cilacap Marine Resources and Fisheries Supervision also has a monitoring facility in the form of patrol boats or *speedboats* measuring 6 meters, 8 meters, and 12 meters which are used to patrol around the waters to monitor the activities of fishermen at sea. In addition, the Cilacap Marine and Fisheries Resources Supervision also formed a supervisory community group to help supervise fishery resources in coastal areas.

Clear law enforcement of the Cilacap Marine and Fisheries Resources Supervision in accordance with the Regulation of the Minister of Marine Affairs and Fisheries Number 71 of 2016 concerning Fishing Routes and Placement of Fishing Gear in the State Fisheries Management Area of the Republic of Indonesia, Supervision of Marine Resources and Fisheries Cilacap confiscated arad fishing gear used by fishermen as an administrative sanction. The sanctions are carried out to apply rules against violations of arad tools. On the other hand, most fishermen depend on the use of the arad fishing gear as their livelihood, the confiscation of arad fishing gear has a social impact on the fishermen. This shows the government's efforts, especially the Cilacap Marine Resources and Fisheries Supervision to increase law enforcement against violations in Cilacap waters.

B. Factors That Cause Fishermen to Still Use Arad in Cilacap Waters

Law Number 45 of 2009 concerning Fisheries and Regulation of the Minister of Maritime Affairs and Fisheries Number 71 of 2016 concerning Fishing Routes and Placement of Fishing Gear in the State Fisheries Management Area of the Republic of Indonesia, explicitly regulates the prohibition of the use of arad, but arad is still used in Cilacap waters based on field research around the coast, showing that the law has not been able to completely eliminate the use of arad fishing gear in the among the fishermen. The reason why many fishermen continue to use arad in Cilacap waters even though it is contrary to positive laws in Indonesia is due to several factors including:

1) Livelihood Factors

Most of the coastal residents in the Cilacap area live as fishermen, especially around the coast of Menganti Beach, Kemiren Beach and Turtle Bay Beach. Fishermen depend on arad as a fishing tool to go to sea every day and get fish catches as the main source of income to meet the needs of life. Because of this, they continue to try to get the most amount of money or income to meet *their family's financial* needs. On the other hand, fishermen find it difficult to switch to other jobs outside the fisheries sector due to the lack of alternative job opportunities for the fishing community. As a result, fishermen continue to use the platter as a tool for fishing.

2) Fish Catch Factors

According to one of the fishermen on the beach of Manganti Cilacap, Arad is considered more efficient in producing catches compared to conventional fishing gear, because of the way Arad's tool is used that sweeps the bottom of the water. Fishermen consider the use of Arad more advantageous compared to regular nets, which have relatively fewer catches. The high catch is the main reason fishermen continue to use it even though the government prohibits the use of Arad.

3) Fishing Gear Change Factors

As a result of interviews conducted with fishermen who use plows on the coast, the fishermen had to buy new fishing gear and change the way they caught fish. The change or diversion from the plough to an environmentally safe fishing gear will require considerable cost, the time of use of different fishing gear and also boat replacement, each type of fishing gear requires a suitable boat that can be used easily by fishermen. Changes in fishing gear can add to the difficulty for small fishermen who have to need other boats by adjusting the type of fishing gear which can increase the cost of expenses from the fisherman. For large fishermen, they also have to adjust it again if they want to change arad fishing gear to other fishing gear, because arad can catch a lot of fish in a shorter time, the use of arad is considered more economically profitable. These costs are considered burdensome for small fishermen who have limited funds. Cost and difficulty of adaptation are the main obstacles to changing fishing gear. As a result, they chose to keep using Arad because the fishing gear was considered the most effective for getting fish, could increase their daily income and was already there and also still worth using.

CONCLUSION

Law enforcement of the use of arad in Cilacap waters by the Cilacap Marine Resources and Fisheries Supervisory, which includes supervision, patrols, socialization, and confiscation, has not been fully effective in stopping the practice. The main factors that cause fishermen to still use arad are economic dependence on livelihood as fishermen, perception of the efficiency of arad catches, and the high cost and difficulty in switching to environmentally friendly fishing gear. Based on the above conclusions, several recommendations were proposed: (1) Increasing the intensity and effectiveness of supervision and patrols of Cilacap Marine Resources and Fisheries Supervision by involving the fishing community through the supervisory group. (2) Implementation of more in-depth and sustainable socialization regarding the negative impact of arad and the benefits of environmentally friendly fishing gear, by involving fishing community leaders. (3) The government needs to consider assistance or subsidy programs for small fishers for

the procurement of environmentally friendly fishing gear. (4) It is necessary to review the effectiveness of existing administrative sanctions or consider other sanctions that are more impactful.

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Conflict of Interest Statement: The author(s) declares that research was conducted in the absence of any commercial or financial relationship that could be construed as a potential conflict of interest,

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