



Law Enforcement of Dangerous Fishing Methods to the Conservation of Inland Fisheries Resources in Public Waters South Sumatera Province

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Abstract

The inland fisheries resources in the public waters of South Sumatra Province are vital for the ecological balance, biodiversity, and socio-economic well-being of local communities. However, the rampant use of dangerous fishing methods poses a significant threat to these valuable resources. This study investigates the efficacy of law enforcement measures in curbing the practice of hazardous fishing methods and their impact on the conservation of inland fisheries resources. The research employs a multidisciplinary approach, combining legal analysis, ecological assessments, and community engagement strategies. Legal frameworks and regulations regarding fisheries management and conservation are scrutinized to identify gaps and weaknesses. Field surveys assess the prevalence and impact of dangerous fishing methods on inland fisheries resources. The study also examines the enforcement mechanisms, including the effectiveness of patrols, penalties, and community awareness programs. Community involvement and stakeholder collaboration are explored as crucial elements in fostering sustainable fishing practices. Furthermore, the research investigates the socio-economic factors driving the use of dangerous fishing methods and proposes alternative livelihoods to mitigate these pressures. The findings aim to inform policy recommendations for strengthening law enforcement strategies, enhancing legal frameworks, and promoting sustainable fisheries management practices. This research contributes to the broader discourse on the delicate balance between conservation efforts, legal enforcement, and community engagement in safeguarding inland fisheries resources in the public waters of South Sumatra Province.

Keywords: *Law Enforcement; Illegal Fishing; Inland Fisheries*

Introduction

The conservation of inland fisheries resources is critical for maintaining ecological balance, sustaining biodiversity, and ensuring the livelihoods of local communities dependent on fisheries¹⁻³. In

the picturesque landscapes of South Sumatra Province, the rich tapestry of public waters harbors an array of aquatic life that plays a pivotal role in the region's socio-economic fabric⁴⁻⁶. However, this delicate equilibrium is under constant threat due to the proliferation of dangerous fishing methods employed by some individuals, jeopardizing the very foundation of these invaluable resources.

The covert use of destructive fishing techniques, such as blast fishing, electrofishing, and poisoning, has emerged as a grave concern, posing severe threats to the aquatic ecosystems and the sustainable utilization of fisheries in South Sumatra⁷⁻⁹. This alarming trend necessitates a proactive and robust approach to law enforcement to curb these illicit activities and ensure inland fisheries' long-term health and productivity¹⁰⁻¹².

This introduction seeks to illuminate the pressing need for intensified law enforcement efforts to curb dangerous fishing methods in the public waters of South Sumatra Province. By examining the environmental consequences, economic repercussions, and social implications of these unsustainable practices, we aim to underscore the urgency of implementing stringent measures to safeguard the region's fisheries resources¹³⁻¹⁵.

Against this backdrop, this paper will delve into the current state of inland fisheries in South Sumatra, analyze the detrimental impact of dangerous fishing methods, and propose comprehensive strategies for law enforcement to protect and conserve these vital aquatic ecosystems¹⁶. By fostering a collaborative approach between authorities, local communities, and environmental organizations, we aspire to establish a robust framework that deters illegal fishing practices and promotes sustainable and responsible resource management^{17,18}.

This endeavor is a call to action, emphasizing the imperative of collective efforts to preserve the delicate balance between human activities and the intricate web of life beneath the surface of South Sumatra's public waters. Through effective law enforcement and community engagement, we aspire to chart a course toward a future where inland fisheries resources are protected and serve as a beacon of sustainable development for generations to come^{19,20}.

Results and Discussion

Condition of Inland Fishery in Public Waters of South Sumatra Province

South Sumatra Province is located between 1 – 4 degrees South Latitude and 102-108 East Longitude with a total area of 109,254 Km² or 10,925,400 Ha. This area is bordered by: - To the North with Jambi Province - To the south with Lampung Province - To the East with Bangka Belitung Province - To the West with Bengkulu Province. South Sumatra Province has a tropical and wet climate with rainfall variations between 1,500 – 3,200 m.m/year and for 2021 as many as 2,331 m.m. Every year, it is rare to find dry months. The driest months are from June to September. On the East Coast, the land consists of swamps and saltwater, which are affected by the tides. The vegetation is in the form of palmase plants and swamp wood (mangroves). There are lowlands and broad valleys to the west, such as the Musi, Ogan, Komerang, and Lematang valleys. The deeper the land, the higher it goes to Bukit Barisan, which divides the area of South Sumatra. It is a mountainous area with an altitude of 900 – 1,200 meters above sea level. The Bukit Barisan, which is the backbone, has peaks, namely Seminung (1,964 m), Mount Dempo (3,159 m), Mount Patah (1,107 m) and Mount Bungkuk (2,125 m). On the west side of Bukit Barisan is a slope that decreases more abundantly than the eastern part. In the valley of the Bukit Barisan area, there are plantations/agriculture areas, especially coffee, tea, and vegetables. The province of South Sumatra has large navigable Rivers. Most Rivers originate from Bukit Barisan, except for the Mesuji, Lalan, and Banyuasin Rivers.

Meanwhile, the River that originates from Bukit Barisan and empties into the Bangka Strait is the Musi River. At the same time, the Ogan River, Komerang River, Lematang River, Kelingi River, Lakitan River, Rupit River, and Rawas River are tributaries of Musi. Currently, the area of mainland public waters reaches 2.5 million ha, including the Musi River and its tributaries, swamps, and lakes. South Sumatra has 11 Rivers and 49 tributaries with a total length of 920 km. The Musi River is the longest in South Sumatra and is an icon of the province.

There are 221 species of fish in the Musi River, one of which is famous for its belida, where the fish are already threatened with extinction. The potential for freshwater fishery production reaches 51,952 tons of the total fishery production in South Sumatra, which reaches 525,679 tons per year.

The following data provides an overview of inland fisheries production in South Sumatra Province.

Table I. Inland fisheries production In the province of South Sumatra, 2017 – 2021 (Tons)

Year	of the Public Waters	Warning	Rice Fields
2017	45 643,2	25 351,5	3.733,8
2018	45 084,2	22 730,8	3 712,1
2019	44 999,6	12 186,3	2 846,2
2020	43 934,5	15 059,6	2 656,9
2021	44 742,5	12 004,7	2 325,9

Source: Central Bureau of Statistics of South Sumatra Province in 2022

The data above shows that almost every year, there is a decline in fishery production in South Sumatra Province. Although overall, the decline in output is not very significant, when compared to the increase in the number of fishermen fishery production, it is clear that there has been a considerable decline in production at the fisherman level. As a comparison, based on the information the researcher obtained from several fishermen, it was stated that in the 2000s, a fisherman in public waters could catch an average of 10 (ten) kg of fish per day. In the 2020s, the acquisition decreased to an average of 10 (ten) kg of fish. - an average of 5 (five) kg/day. Based on the observations made by the researchers, the condition of several types of fish that live and thrive in South Sumatra Province's public waters is decreasing, and some of them can be considered rare.

Fishing Techniques Classified as Harmful to Fishery Resources

According to Law No. 45 of 2009 concerning "Fisheries," acts that can be punished are regulated in Article 24 to Article 28. According to Article 25, the penalty is imprisonment for 10 (ten) years and a maximum fine of hundred million rupiah), whoever violates Article 23 paragraph (1) and Article 24 paragraph (1). Article 23, paragraph (1) prohibits any individual/legal entity from carrying out fish-catching and cultivating activities using materials and tools that can endanger preserving fish resources and the environment. Meanwhile, Article 24, paragraph (1) prohibits any individual/legal entity from committing an act that results in pollution and damage to fish resources and the environment. The definition of "pollution and damage to fish resources and the environment" is formulated in Articles 1, 13, and 16. According to Article 25, violations of Article 23, paragraph (1), and Article 24, paragraph (1) should occur within Indonesia's fishing territory as defined in Article 2, subsections a and b. This territory includes Indonesian waters and inland bodies such as rivers, lakes, reservoirs, swamps, and other water bodies within Indonesia's borders. Therefore, such violations should not occur within the Indonesian Exclusive Economic Zone (ZEEI).

Based on the identification of the results of research conducted by the author, several ways of fishing can be categorized as ways that damage fishery resources in South Sumatra Province. These methods include:

1) Catching Fish Using Electricity and Poison

Electrocution to catch fish is currently the most widely used method, especially in public waters, rivers, and tributaries. In the past, users of this method used electricity (PLN) and long cables. They usually steal electricity by hooking up from outside installations. Finally, if caught, they are typically threatened with stealing electricity, not destroying fishery resources. With current technological developments, this method no longer uses electricity (PLN) but instead uses batteries (accu) reinforced with transformers that can increase the voltage. According to them, this method is much more effective because they don't need long cables and can reach the places they want. Usually, they operate on the rivers by boat. Two people operate each ship. One person carries out fishing activities using a "scoop" with a long handle (usually, the length is adjusted to the depth of the River, approximately 4-6 m). Meanwhile, another person is in charge of controlling the boat. This method is found in almost all regencies and cities in South Sumatra Province.

Researchers found that the most severe circumstances were identified in Palembang City and Ogan Ilir Regency. In specific regions, there is a lack of acceptance for these procedures, resulting in their absence. According to the author's observations, Kijing Bay in Banyu Asin Regency is an area that does not employ fishing tactics that harm fishery resources. The region is called Pedamaran Ogan Komering Ilir (OKI) Regency. The locations mentioned are Pemulutan and Pegayut in the Ogan Ilir Regency, specifically in Belido Muara Enim. Suppose anyone is apprehended in Teluk Kijing village while engaging in the act of fishing using stunning or poisonous methods. In that case, they will be promptly subjected to legal proceedings and penalized by the Village Head.

In Pedamaran village, OKI Regency, and along the Belido River, Muara Enim Regency, no one dares to catch fish using electricity and poison because the local government has auctioned off the Rivers and lakes in the village. Of course, the management is authorized to be the auction winner. In the towns of Pemulutan Ilir to Pegayut OI District, the perpetrators of catching fish using electricity and poison do not dare to operate there because, along the banks of the River, many people keep fish in cages.

If, during the New Order era, the practice of using electricity and poison to catch fish was still carried out secretly because at that time there were officers (Babinsa) who were greatly feared by the perpetrators, now they, the perpetrators of using electricity and poison to catch fish, even dare to do this during the day and in crowded places. Besides weak supervision/law enforcement, economic factors are the leading cause of the widespread practice. Most perpetrators are unemployed and previously worked in the wood sector (saw mill/panglong). Since the revocation of several HPHs (Forest Concession Rights) that timber businessmen in South Sumatra Province previously owned, many timber companies that had mushroomed on the banks of Rivers in South Sumatra Province have been forced to close. As a result, many layoffs occurred.

2) Fishing by Using Waring

The Waring is a tool used to raise fish. In the past, Waring was usually made of woven bamboo. But with today's technological advances, people prefer a cheaper and more practical way, namely by using "warning." This waring is a very tight net/mesh-like material, making it difficult for mosquito larvae to escape from the waring hole. Waring fishermen widely use two types of waring materials: black waring netting with a density of less than 2 mm and netting netting with a density of less than 1 mm. This material is now used for catching fish. You can imagine how significant the impact would be if the fish that had just hatched couldn't escape the net.

Warnings are typically disseminated along the banks of the tidal River, which have a sloping terrain. Anglers who utilize the Waring usually await the tidal cycle. The Waring was installed as the flood receded. Initially, the Waring placed on the River's bank was left in a horizontal position on the

ground at the foot of the riverbank. As the water level increases, the fish typically engage in playful activities and search for food along the river bank. As the flood reached its highest point, the Waring that was previously on the ground was lifted by securing its top to the prepared supports. The lower section is partially submerged in the earth, preventing fish from escaping as the river water recedes, so they are trapped. Fishermen started to catch fish once the River water receded. According to the researchers' observations, the fishermen choose to target large fish or fish of marketable size throughout the harvest period.

Meanwhile, the young small fish will die in a Waring where the water is dry. Warnings can only be used to catch fish in Rivers that experience tides. It cannot be done throughout the year but only during the dry season, from April to October. Based on the researcher's interview with a fisherman of Warings, they can produce 50-100 kg of fish for Warings that are approximately 100 meters long in one harvest.

In certain places considered strategic places for fish to play/forage, fishers install the Waring permanently. In other words, they raise the top of the Waring when the tide is at its peak, and after harvesting the fish at low tide, they lower the Waring again. In the Province of South Sumatra, the use of Warnings as a tool for catching fish is widely found in the Musi River from the Ajaran Strait to Pulokerto (Gandus) in the Ogan River from Kertapati to Pemulutan.

3) Catching Fish Using Poison

Traditionally, people often used the root of "tuba" as an ingredient to poison fish in Warings, lakes, and Rivers. Using tuba roots to catch/poison this fish is not easy. The root of the tuba must be pounded first to remove the sap. Moreover, the poison strength of the tuba root is relatively low. As a comparison, to poison a Waring with an area of 10 m x 10 m (10 m²), at least 20 kg of tuba roots are needed, whereas if using putas (potassium), for a Waring of the same size (10 m²) only ½ kg of putas is required. Most of the poisons or toxic materials used to catch fish are poisons that should be used to eradicate pests and weeds.

Based on its destructive power, using this poison is the most dangerous way of fishing because the impact is far-reaching and very lethal to all fishery resources. However, users of this method usually have to calculate the fish yield they get because these poisons are very expensive. Especially now that sales are generally very tight because they are often misused. For one kg of Pottasium (putas), currently the price reaches Rp. 80.000,-. The poisons frequently used to catch/poison fish include Potassium, Decis, Tiodan, and others.

4) Catching Fish Using Explosives

In public waters in South Sumatra Province, this method of fishing using explosives is rare. Based on the researchers' observations, this method was only occasionally found in Gelumbang and Karang Endah sub-districts along the Putak River, from Putak village to Modong village. The perpetrators are usually unscrupulous members of the TNI who are just fad working with the local village community. The explosives used are usually ready-to-use, such as mortars and grenades or self-prepared explosives from TNT or gunpowder.

The four fishing methods above can be categorized as criminal acts because, according to Mulyatno's opinion: "According to its intention or nature, these acts are acts that are against the law. These actions are also detrimental to society in the sense of contradicting or hindering the implementation of the social order, which is considered good and just.

From the description above, it can be concluded that an act will become a crime if the act: a. Against the law; b—detriment to society; c. Prohibited by criminal rules; d. The perpetrator is threatened

with a criminal sentence. So it is clear that the four fishing methods above fulfill the elements of a criminal act as described by Mulyatno, where the four acts are against the law and are detrimental to society, and based on Article 6 paragraph (1) of Law no. 9 of 1985 Concerning Fisheries, this act is prohibited and punishable by crime.

Law Enforcement for the Protection of Inland Fishery Resources in Public Waters in South Sumatra Province

The ideal law enforcement must be accompanied by an awareness that law enforcement is a social sub-system, so environmental influences are pretty significant, such as political, economic, and socio-cultural developments, defense and security, science and technology, education, and so on. Law enforcement itself must be interpreted as a framework of three concepts, namely the concept of total law enforcement (total enforcement concept), which demands that all values behind the legal norms be enforced without exception, which is complete (entire enforcement concept), which realizes that the concept needs to be implemented. Limited by procedural law and so on for individual protection and the concept of actual law enforcement (actual enforcement concept), which emerged after it was believed that there was discretion in law enforcement due to limitations related to infrastructure, quality of human resources, and quality of legislation. -invitation and lack of community participation.

1) Law Enforcement through the Criminal Justice System

The enforcement of criminal law can be briefly formulated as "the implementation of the functions and duties of law enforcement officers to tackle crime." This formulation takes from several definitions regarding criminal law enforcement, formulated in a narrow and broad sense. In a narrow sense, criminal law enforcement is only seen from the "works" of law enforcement officers, while in a broad sense, it includes the activities of making laws and regulations up to their implementation.

Law enforcement officers who carry out law enforcement work in a criminal justice system are carried out in stages, from investigation, prosecution, and examination before a court session to implementing court decisions in correctional institutions. This ongoing activity is a series by the Police, Prosecutors, Courts, and Correctional Institutions. Therefore, criminal justice is a gradual and orderly process in various activities. Based on the author's research results, until now, there has not been a single case of catching fish in ways that damage fishery resources in South Sumatra Province that has reached the court. None of the cases the Police have processed have reached the Prosecutor's Office. Even more ironic, the researchers found no records of cases that the Police had processed. Although based on information obtained by researchers in the field, both from the community, perpetrators, and the Police themselves, there are pretty several cases of arrests of fishing actors in ways that damage fishery resources carried out by the Police. Based on the results of observations and interviews conducted by researchers, there are several ways to solve fish-catching actors using methods that damage fishery resources in South Sumatra Province, namely:

1. The arrest was made at the crime scene and immediately resolved at the crime scene itself.
2. The arrest was made at the TKP and resolved by deliberation at the residence of the local community leader.
3. Arrests were made at the TKP and completed at the nearest Police office/posts.
4. The arrest was made at the perpetrator's residence based on reports from the public, and it was completed there.
5. The arrest was made at the perpetrator's residence based on reports from the public and was completed at the residence of the local community leader.
6. The arrest was made at the perpetrator's residence based on reports from the public and was completed at the nearest police office/post.

The confiscation of the evidence used usually accompanies the arrests made by the Police. Unfortunately, as the case is over, usually after negotiations between the perpetrator and the Police, the perpetrator can retake the evidence. As a result, these actions will, of course, be repeated. Even when an arrest occurs, the settlement is often with the obligation of the perpetrator to make a statement not to repeat his actions. Suppose it is analyzed based on the factors influencing law enforcement, as Soerjono Soekanto stated. In that case, it can be concluded that the weak law enforcement for protecting inland fishery resources in public waters of South Sumatra Province is due to the weakness of law enforcement officials and the culture of the people who prefer cases to be resolved out of court.

Furthermore, if analyzed based on the analytical framework as stated by Goldstein, law enforcement for the protection of inland fishery resources in the public waters of South Sumatra Province can be categorized as an "Area of No Enforcement" (an area where criminal law enforcement cannot be fully implemented). Meanwhile, if examined based on Friedman's theory of law enforcement, the weakness of law enforcement lies in the Legal Culture, not in Legal Substance or Legal Structure. The weakness of law enforcement through the Criminal Justice System is due to the culture of our society, which prefers to find shortcuts in solving the legal problems it faces.

2) Law Enforcement by Government Officials and Communities

In several parts of the Province of South Sumatra, law enforcement on the protection of fishery resources is more effectively carried out by government officials, starting from the Regent/Mayor, Camat, Lurah/Village Head, to Kadus, Rukun Warga (RW) and Rukun Tetangga (RT). Lahat Regency specifically issued Regional Regulation Number 5 of 1989 concerning the Prohibition of Catching Fish with Prohibited Substances and Equipment in the Lahat District Level II Region. In considering (Considering) the Regional Regulation, among others, it is stated: a. that the fish population in public waters is strongly influenced by how the community conducts fishing activities. b. that fishing with toxic materials, explosives, electricity, and the like can kill large and small fish populations. c. that to preserve the environment, especially fish populations, it is necessary to prevent fishing activities using toxic materials, explosives, and electric devices (stun).

Article 2 of this regional regulation expressly states, "It is prohibited to catch fish using toxic materials, explosives, and electric devices which can cause drunkenness and death of fish in the water." Furthermore, regarding the Penalties, Article 4 of this Regional Regulation states anyone who violates the prohibition referred to in Article 2 of this Regional Regulation shall be subject to imprisonment for a maximum of 1 (one) year and a fine of up to Rp. 1,000,000.- (one million rupiah). Even though the criminal threat stipulated in this regional regulation is not as severe as the criminal provisions stipulated in Law Number 9 of 1985, namely, "prison sentence for a maximum of 10 (ten) years and or a fine of up to Rp. 100,000,000.- (one hundred million rupiah)", during the reign of the Regent H. M. Kafrawi Rahim, this regional regulation was quite effective.

There seems to be confusion when applying regional regulations, as mentioned above. The provisions that have been regulated by law no longer need to be controlled by regional regulations because the provisions of the law are generally applicable throughout the territory of the Republic of Indonesia. However, in reality, when it comes to criminal acts related to environmental destruction and pollution, including the destruction of fishery resources, especially those committed by individuals (not companies), the resolution is mostly by using the provisions of regional regulations rather than the provisions of the law. Based on Article 143 paragraph (2) Law No. 32 of 2004 concerning Regional Government, Perda can contain a maximum penalty of 6 (six) months imprisonment or a maximum fine of 50,000,000.00 (fifty million rupiah). If you look at this provision, the Lahat Regency Regional Regulation above must be replaced because it contradicts the provisions of Law No. 32 of 2004 concerning Regional Government. However, when viewed from Article 143 paragraph (3), there is still an

opportunity to contain criminal threats or fines other than those referred to in paragraph (2) following what is regulated in different laws and regulations.

In Musi Rawas, in 1992, the Regent Head of Region Instruction was issued Number 167/Inst./HK-Perek/1992 concerning the prohibition of fishing with prohibited materials and tools. From the issuance of this instruction until the late 1990s, the District Head's Instruction was implemented effectively by the ranks of government officials in Musi Rawas Regency so that any perpetrators of fishing with prohibited materials and equipment were dealt with strictly. Unfortunately, no records were found regarding the identity of the perpetrators and the actions/punishments handed down. According to Mr. M. Sobri, usually, the perpetrators were immediately fined and asked to make a statement not to repeat the act.

These instructions have ceased to be followed since the onset of the Reformation era. The illegal practice of employing prohibited materials and methods, including stun and poison, to catch fish is once again being conducted. In response to the widespread use of prohibited substances and tools for fishing in Rawas Ilir District, the Rawas Ilir District Leadership Meeting (Muspika) has issued a Joint Decree Number: 01/SKB/III/2002. This decree strictly prohibits the catching of fish and aquatic biota using prohibited materials and tools in public waters within the Rawas Ilir District. As for the basis for issuing the SKB, in the points of consideration (Considering), it is explained, among others: a. the large number of reports from the public regarding the actions of irresponsible persons in fishing using poison and stroom; b. many complaints from the community, traditional small fishermen whose livelihoods have died due to the actions of elements which catch fish using poison/tuba and electrocution in public waters, Rivers, swamps, and lakes in Rawas Ilir District; c. that the habitat of fish and shrimp, as well as other aquatic biotas in public waters, Rivers, lakes and swamps, is greatly influenced by the method and behavior of fishing activities carried out by the community; d. that to preserve the environment of public waters in the form of Rivers, lakes, and swamps, it is necessary to prevent activities that can damage and pollute the habitat of fish/water biota, as well as to protect the survival and livelihood of farmers, traditional small fishermen who use water as their source of life. It is imperative to ban the prevention of damage and pollution of public waters by employing hazardous substances, explosives, and staterooms, as stipulated in a Joint Decree issued by the Rawas Ilir District leadership. The SKB stipulates criminal prohibitions and threats referring to Law Number 9 of 1985, namely as follows: First: prohibiting anyone taking/catching fish or another aquatic biota in public waters, Rivers, lakes, and swamps using toxic materials, explosives and electric current/restroom Second: whoever deliberately violates this stipulation, strict action will be taken following the provisions of the applicable laws and regulations and is subject to imprisonment for a maximum of 5 (five) years and a fine of up to Rp. 100,000,000 (one hundred million rupiah) according to Law Number 9 of 1985. However, it is a shame that other districts did not follow the positive steps taken by the Rawas Ilir District Leadership Conference (Muspika). The Muara Enim Regency Government is also trying to overcome the fishing problem in ways that damage fishery resources.

The Regent of Muara Enim 2001 issued the Regent Head of Region Instruction Number: 20/Inst./HK-Perek/2001 concerning the Prohibition of Catching Fish with Stroom, Poison, and Explosives. The District Head's instruction proved to be very effective in tackling the rampant practice of fishing using prohibited tools and materials because the instruction was implemented by all levels of government, starting from the sub-district head to the village head and hamlet head. Even today, in several strategic places on the banks of the River in Muara Enim Regency, we still find boards bearing the Regent's Instructions.

Conclusion

Based on the discussion of the subject matter, it can be concluded that law enforcement through litigation against fishing methods that are dangerous to the preservation of fishery resources in public waters of South Sumatra Province is still minimal. Law enforcement for the protection of fishery resources is carried out more effectively by government officials, starting from the Regent/Mayor, Camat, Lurah/Village Head, to Kadus, Rukun Warga (RW), and Rukun Tetangga (RT).

Reference

- Utete B, Kupika OL, Mahlatini P, Nyachowe T. How local communities access, utilise and evaluate inland fisheries, and their influence on fishery conservation status in northern Zimbabwe. *Water SA*. 2022;48(3):227-239. doi:10.17159/wsa/2022.v48.i3.3885.
- Mu X, Yuan L, Meng S, Huang Y, Chen J, Li Y. Significant decline of water pollution associated with inland fishery across China. *Eco-Environment Heal*. 2023;2(2):79-87. doi:10.1016/j.eehl.2023.05.002.
- Standal D, Hersoug B. Illegal fishing: A challenge to fisheries management in Norway. *Mar Policy*. 2023;155. doi:10.1016/j.marpol.2023.105750.
- Ainsworth RF, Cowx IG, Funge-Smith SJ. Putting the fish into inland fisheries – A global allocation of historic inland fish catch. *Fish Fish*. 2023;24(2). doi:10.1111/faf.12725.
- Ditya YC, Muthmainnah D, Wiadnyana NN, et al. Assessing the Ecosystem Approach to Fisheries Management in Indonesian Inland Fisheries. *Polish J Environ Stud*. 2022;31(3). doi:10.15244/pjoes/144922.
- Kuemlangan B, Amidjogbe ER, Nakamura J, et al. Enforcement approaches against illegal fishing in national fisheries legislation. *Mar Policy*. 2023;149. doi:10.1016/j.marpol.2023.105514.
- Olii AH, Kakilo MR, Facrussyah ZC. Illegal Fishing and Fishermen Income in Lemito Village Pohuwato Regency, Indonesia. *Egypt J Aquat Biol Fish*. 2024;28(1). doi:10.21608/ejabf.2024.341609.
- Budianto S, Purbayanto A, Wiryawan B, Wisudo SH, Riyanto M, Elvitrysyah T. Promoting sustainable fisheries: the policies and actions on combating illegal fishing in the North Natuna Sea of Indonesia. *AACL Bioflux*. 2022;15(5).
- Ambarsari KT, Rahmansyah I, Fajar MA, Putri ADA. Concept of Illegal Fishing for Indonesian Regulations and UNCLOS. *Yuridika*. 2023;38(1). doi:10.20473/ydk.v38i1.38045.
- Gumilar HR. Illegal Fishing in Indonesia and the Role of International Maritime Law on Illegal Fishing Action. *Indones J Environ Law Sustain Dev*. 2022;1(1). doi:10.15294/ijel.v1i1.56839.
- Nyboer EA, Musinguzi L, Ogutu-Ohwayo R, et al. Climate change adaptation and adaptive efficacy in the inland fisheries of the Lake Victoria basin. *People Nat*. 2022;4(5). doi:10.1002/pan3.10388.
- Nguyen HH, Nguyen TN, Tran TT, Nguyen THT, Nguyen XH, Nguyen TD. Present status of inland fisheries and its linkage to ecosystem health and human wellbeing in North Central of Vietnam. *Ecosyst Serv*. 2023;59. doi:10.1016/j.ecoser.2022.101505.

- Mir Mohamad Tabar SA, Mazlom Khorasani M, Noghani M. Climate change, general strain and illegal fishing: An empirical test of Agnew's criminology of climate change theory in Iran. *Soc Sci J*. 2023;60(4). doi:10.1080/03623319.2020.1750843.
- Shalehin MS, Parvez MT, Lucas MC, Galib SM. A case study of illegal fishing causes during seasonal fishery closure in Kaptai Lake, Bangladesh. *Fish Manag Ecol*. 2022;29(5). doi:10.1111/fme.12536.
- Suhaidi, Sunarmi, Alhayyan R, Tarigan VCE. Illegal Fishing in Vernacular Maritime Settlements: A Bibliometric Analysis. *ISVS e-journal*. 2023;10(6).
- Ford JH, Wold C, Currie D, Wilcox C. Incentivising change to beneficial ownership and open registers—Holding flag states responsible for their fleets and costs of illegal fishing. *Fish Fish*. 2022;23(5). doi:10.1111/faf.12677.
- Dirhamsyah D, Umam S, Arifin Z. Maritime law enforcement: Indonesia's experience against illegal fishing. *Ocean Coast Manag*. 2022;229. doi:10.1016/j.ocecoaman.2022.106304.
- Phuong T Van, Pomeroy RS. Addressing Illegal, Unreported and Unregulated Fishing of Vietnamese Fishing Vessels in Foreign Waters. *Asian Fish Sci*. 2023;36(1). doi:10.33997/j.afs.2023.36.1.003.
- Zhang H, Li D, Zhong X, Xiong Y. Assessment of ecological damage from illegal fishing and judicial practice for damage compensation. *Ocean Coast Manag*. 2023;246. doi:10.1016/j.ocecoaman.2023.106909.
- Santos MR, Lynch MJ. The cross-national association between institutional imbalance, national culture, and illegal fishing. *Mar Policy*. 2023;151. doi:10.1016/j.marpol.2023.105601.

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