

## **Public Perception of Mangrove Crab Catching Restrictions in Kuala Lupak Village, Tabunganen District, Barito Kuala Regency**

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### **ABSTRACT**

**Keywords:**

Barito Kuala;  
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Perception;

Due to increasing pressure from exploitation, the government has issued several regulations to maintain the sustainability of mangrove crab resources. Regulation of the Minister of Maritime Affairs and Fisheries (Permen KKP) Number 17 of 2021, later amended by Regulation of the Minister of Maritime Affairs and Fisheries Number 16 of 2022, regulates the utilization of lobsters, crabs, and swimming crabs in Indonesian territory. The research aims to analyze public perceptions of restrictions on catching mangrove crabs in Kuala Lupak Village, Tabunganen District, Barito Kuala Regency. This research was conducted in Kuala Lupak Village, Tabunganen District, Barito Kuala Regency, South Kalimantan Province. The perceptions and behavior of fishermen towards the regulations of the Minister of Maritime Affairs and Fisheries, the entire population of mangrove crab fishermen will be the research respondents, namely 50 respondents. Data analysis used in this research activity is a Likert scale used to measure the attitudes, opinions, and perceptions of an individual or group of people about social phenomena. Fishermen's Perception of Regulation (Very Positive) Fishermen's perception of the Regulation of the Minister of Maritime Affairs and Fisheries Number 7 of 2024 is categorized as Very Positive (average score close to 4.00, on a scale of 1-4). Acceptance of Benefits: Fishermen strongly agree that this regulation is beneficial and effective in the long term, especially because the community has felt its impact directly, namely the size of the crabs caught tends to be larger (increasing the selling price). Understanding of Conservation: There is adequate understanding of the need for conservation, including the importance of keeping egg-laying crabs and crabs below the minimum size so that resources do not become extinct.

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### **INTRODUCTION**

A coastal village is an area partially or entirely bordered by the sea, and its residents depend on marine and fishery resources for their livelihoods. The lives of coastal communities are strongly influenced by the use of these resources, creating a distinctive village typology based on the primary livelihood of its residents. South Kalimantan has several coastal villages, one of which is Kuala Lupak Village in

Tabunganen District, Barito Kuala Regency, which reflects the socio-ecological characteristics of these coastal communities.

Kuala Lupak Village has a long history, stemming from the expansion of Tabunganen Pemurus Village. Its population is dominated by the Banjar people, originating from Alalak, Kuin, Kelayan, Kandangan, Amuntai, Barabai, Hulu Sungai, and parts of Java. This area initially served as a stopover (*perampak*) for Banjar people who earned a living from coastal natural resources. As the population grew, a permanent settlement was formed, now known as Kuala Lupak Village or Lupak Luar.

Kuala Lupak is a remote village surrounded by mangrove forests and directly borders Central Kalimantan Province. The community is homogeneous, predominantly Banjarese and Muslim, with the primary livelihood being mangrove crab fishermen. The village covers an area of 5,000 hectares, with land use encompassing 3,000 hectares of fishponds, 230 hectares of protected forest, residential areas, schools, offices, transportation routes, and unused land (Kuala Lupak Village Profile, 2021). The village's predominantly mangrove-rich geography makes it highly dependent on mangrove crab resources for its economic survival.

The mangrove crab (*Scylla serrata* Forskal 1775) is a highly economically valuable coastal biota that lives in mangrove and estuary areas. Mangrove forests are the natural habitat of mangrove crabs (Kanna, 2002), making the vast mangrove area of approximately 4.2 million hectares in Indonesia a key buffer for the sustainability of this resource. Mangrove crabs prefer specific habitats, such as river estuaries and tidal swamps with muddy substrates. Coastal communities' dependence on mangrove crabs makes this species a vital commodity in the local economy.

In response to increasing exploitation pressure, the government has issued several regulations to safeguard the sustainability of mangrove crab resources. Ministerial Regulation of Maritime Affairs and Fisheries (Permen KKP) Number 17 of 2021, later amended by Regulation of Maritime Affairs and Fisheries Number 16 of 2022, regulates the use of lobsters, crabs, and swimming crabs in Indonesia. This regulation aims to maintain resource sustainability, improve community welfare, and encourage cultivation. Regulations are continually revised and updated to reflect field needs and the dynamics of resource utilization.

In 2024, the government re-issued Ministerial Regulation Number 7 of 2024, which replaced all previous provisions regarding the management of lobsters, crabs, and swimming crabs. This regulation strengthens sustainability aspects, protects natural stocks, accelerates technology transfer, increases investment, and optimizes state revenue. The legal basis for the preparation of this regulation includes Article 17 paragraph (3) of the 1945 Constitution, the Fisheries Law, the Law on State Ministries, the Presidential Decree concerning the structure of the Ministry of Maritime Affairs and Fisheries, and other technical regulations. This regulation has

direct implications for mangrove crab fishing activities in coastal areas, including in Kuala Lupak Village.

Government regulations, as a form of "social coercion," often elicit different responses from communities, depending on their perceptions, knowledge, habits, and socio-cultural conditions. According to social behavior theory, human actions are influenced by norms, motivations, goals, and environmental situations/conditions (Arief, 2002). Coastal community norms are shaped by inherited lifestyles, including traditional crab fishing traditions passed down across generations. Therefore, fishing restrictions through new regulations have the potential to create diverse perceptions among fishermen.

In Kuala Lupak Village, residents have long relied on mangrove crab fishing for their livelihoods using traditional tools and methods. This activity is not only a livelihood but also part of their cultural identity and family heritage. Once fishing restrictions are implemented, community perceptions of the policy are a critical factor in determining the success of their implementation. This research aims to analyze community perceptions of mangrove crab fishing restrictions in Kuala Lupak Village, Tabungnen District, Barito Kuala Regency.

## LITERATURE REVIEW

Mangrove crabs are an important commodity in coastal fisheries, possessing high economic value and have long been a source of livelihood for communities living in mangrove areas. One widely discussed species is *Scylla serrata*, known for its salinity adaptation, robust carapace morphology, and habitat in muddy mangrove ecosystems (Kanna, 2002). In addition to its role in maintaining ecological balance, mangrove crabs are a commodity cultivated and harvested both traditionally and commercially, making this species relevant for study in socio-economic contexts and sustainable management.

For coastal communities, particularly fishermen and fish farmers, perception is a crucial element in determining their attitudes and decisions regarding fisheries resource management. Perception is the process of interpreting stimuli that arise through a person's experiences, needs, and senses (Tahmid et al., 2015). Perception is influenced not only by personal factors but also by the social environment, cultural values, and prevailing policies. Therefore, coastal communities' perceptions of mangrove crab resources will influence how they evaluate their economic benefits, sustainability, and fishing or cultivation practices.

Fishermen's behavior in catching or cultivating crabs is also influenced by their knowledge, habits, and the incentives they receive. Based on Skinner's S-O-R theory, behavior is an organism's response to a stimulus, which in this context includes the availability of fishing gear, crab prices, or government regulations regarding fishing (Siahainenia, 2008). Predisposing, enabling, and reinforcing factors can shape fishermen's behavior patterns, for example, certain fishing

techniques passed down from generation to generation or changes in behavior when there are sanctions and fisheries supervision.

The socio-economic characteristics of fishers also determine how they utilize mangrove crab resources. Small-scale fishers generally rely on simple fishing gear and focus on meeting daily needs, making them vulnerable to environmental and policy changes (Amir et al., 2019). Structural poverty, limited access to capital, and dependence on external markets often place fishers in a marginalized position (Sulastini, 2011). Women's roles in processing, trading, and fisheries services are integral to the coastal household economy, strengthening socio-ecological relations within fishing communities.

Mangrove crab management in Indonesia is governed by several regulations, including Ministerial Regulation No. 17 of 2021, amended by Ministerial Regulation No. 16 of 2022, and the most recent regulation, Ministerial Regulation Number 7 of 2024 concerning the management of lobsters, crabs, and swimming crabs. These regulations govern the capture, export, and cultivation of crabs to ensure stock sustainability and improve the welfare of fisheries entrepreneurs. Dwigothammy et al. (2024) demonstrated that fishermen's perceptions of coastal species can be influenced by ecological knowledge and empirical experience. This reinforces the importance of understanding fishermen's perceptions and behavior in supporting the sustainable management of mangrove crabs in coastal areas.

## **METHOD**

This research was conducted in Kuala Lupak Village, Tabunganen District, Barito Kuala Regency, South Kalimantan Province. The entire population of mangrove crab fishermen, 50, was selected as respondents.

Data analysis in this study employed quantitative and qualitative descriptive analysis, and a Likert scale was used to measure the attitudes, opinions, and perceptions of an individual or group of people regarding social phenomena (Sugiyono, 2011). Data were collected through interviews and questionnaires with fishermen in Kuala Lupak Village. The scores ranged from 1 to 4, with the following assessments:

- Score with a value = 4 categories strongly agree
- Score with a value = 3 categories agree
- Score with a value = 2 categories somewhat agree
- Score with a value = 1 category disagree

## **RESULT AND DISCUSSION**

Four main indicators were used to measure fishermen's perceptions of the Minister of Maritime Affairs and Fisheries Regulation Number 7 of 2024: Knowledge of the Minister of Maritime Affairs and Fisheries Regulation, Effectiveness of the

Regulation, and Benefits of the Regulation.

### **Knowledge of the Minister of Maritime Affairs and Fisheries Regulation Number 7 of 2024**

Knowledge of the Minister of Maritime Affairs and Fisheries Regulation Number 7 of 2024 significantly influences individual or group perceptions of the regulation's implementation and impact. Individuals with in-depth knowledge, for example from having read a copy of the regulation directly, tend to have more accurate and detailed perceptions of its purpose, scope, and potential positive and negative consequences. The public may understand the nuances of each article, applicable sanctions, or implementation mechanisms, so public perceptions are based on factual data and comprehensive understanding. This differs from individuals whose knowledge is limited to the information provided. Although the public may understand the essence of the regulation and its relevance, public perceptions may be influenced by the perspective or interpretation of the person conveying the information. This potential bias or lack of detail can lead to public perceptions that are less comprehensive than those of those who read the information directly.

Perceptions become increasingly biased if knowledge is acquired solely through the media. News or media articles often present filtered, simplified, or even dramatized information to attract readers. These perceptions may focus on sensational issues, prominent pros and cons, or points deemed important by the media, without understanding the full context and provisions of the Minister of Maritime Affairs and Fisheries Regulation. Such perceptions are often more reactive and emotional than rational. Finally, for those unfamiliar with Minister of Maritime Affairs and Fisheries Regulation Number 7 of 2024, their perceptions of marine and fisheries issues may be entirely unrelated to this regulation. The public may only form perceptions when information suddenly emerges and captures their attention, which is likely influenced by the first source of information they receive. The level and method of acquiring knowledge play a crucial role in shaping public perception of any regulation, including Minister of Maritime Affairs and Fisheries Regulation Number 7 of 2024, which in turn can influence levels of compliance, support, or rejection of the regulation. The results of processing perception data regarding knowledge regarding the Regulation of the Minister of Maritime Affairs and Fisheries (Regulation of the Minister of Maritime Affairs and Fisheries) Number 7 of 2024:

Table 1. Fishermen's Knowledge of the Minister of Maritime Affairs and Fisheries Regulation Number 7 of 2024

| <b>Are you aware of the Minister of Maritime Affairs and Fisheries Regulation Number 7 of 2024?</b> |                     |                                          |                       |              |                    |
|-----------------------------------------------------------------------------------------------------|---------------------|------------------------------------------|-----------------------|--------------|--------------------|
| <b>Answer Options</b>                                                                               | <b>Explanation</b>  | <b>Frequency (Number of Respondents)</b> | <b>Percentage (%)</b> | <b>Score</b> | <b>Total Score</b> |
| Very Knowledgeable                                                                                  | Read it before      | 14                                       | 28%                   | 4            | 56                 |
| Knowable                                                                                            | Someone said it     | 35                                       | 70%                   | 3            | 105                |
| Don't Know                                                                                          | Through the media   | 1                                        | 2%                    | 2            | 2                  |
| Really Knowledgeable                                                                                | I don't know myself | 0                                        | 0%                    | 1            | 0                  |
| <b>TOTAL</b>                                                                                        |                     | <b>50</b>                                | <b>100%</b>           |              | <b>163</b>         |

Description: Average Knowledge Score:  $163/50=3.26$  (Strongly Agree)

Table 1 shows that the majority of mangrove crab fishermen in Kuala Lupak Village have adequate knowledge of the Minister of Maritime Affairs and Fisheries Regulation Number 7 of 2024. Seventy percent of respondents stated that they learned about this regulation through information provided, while 2% learned about it through the media. No respondents reported being completely unaware of this regulation. With an average knowledge score of 3.26, which falls within the "Strongly Agree" category (3.25 - 4), information regarding the regulation has been communicated fairly well to fishermen. This indicates effective outreach or information dissemination efforts at the local level, likely through fisheries extension workers, community leaders, or fellow fishermen. This knowledge is an important predisposing factor in shaping perceptions and behavior, as explained by Lawrence Green.

In the context of this study of fishermen's perceptions of the Minister of Maritime Affairs and Fisheries Regulation Number 7 of 2024, fishermen's knowledge is a key foundation. Relevant journals indicate that low levels of fishers' education often correlate with a less in-depth understanding of issues and policies, despite general community approval. This emphasizes the urgency of comprehensive and easily digestible socialization regarding the Minister of Maritime Affairs and Fisheries Regulation Number 7 of 2024, ensuring that fishers not only understand the regulation's contents but also deeply understand its objectives, implications, and the rationale behind each provision. Adequate knowledge is crucial for fishers to accurately perceive the long-term benefits and sustainability of the regulation, rather than being limited to a superficial understanding that may not align with actual behavior on the ground (Trianty et al., 2021).

### Effectiveness of Regulations

The effectiveness of a regulation, including Regulation of the Minister of Maritime Affairs and Fisheries (Peraturan Menteri Maritime dan Perikanan) Number 7 of 2024, is closely related to public perception of it. A regulation is considered effective if the objectives it seeks to achieve are actually realized in practice, and this is greatly influenced by how the regulation is received and understood by affected parties. When individuals or groups have positive perceptions about the relevance, clarity, fairness, and benefits of Regulation of the Minister of Maritime Affairs and Fisheries Number 7 of 2024, the public is more likely to comply with and support its implementation. Conversely, if the perception is negative, for example, because it is perceived as irrelevant, unclear, unfair, or even detrimental, the regulation's effectiveness will be compromised. Negative perceptions can trigger rejection, lack of compliance, or even resistance to its implementation, making it difficult to achieve the regulation's initial objectives. Understanding and managing public perception is key to ensuring the effectiveness of regulations such as the Minister of Maritime Affairs and Fisheries Regulation Number 7 of 2024. The results of processing perception data regarding the effectiveness of the Minister of Maritime Affairs and Fisheries Regulation Number 7 of 2024 are as follows:

Table 2. Effectiveness in Regulating Crab Size and Condition

| Effectiveness in Managing Crab Size and Condition |                                   |                |      |            |
|---------------------------------------------------|-----------------------------------|----------------|------|------------|
| Answer Options                                    | Frequency (Number of Respondents) | Persentase (%) | Skor | Total Skor |
| Strongly Agree                                    | 47                                | 94%            | 4    | 188        |
| Agree                                             | 2                                 | 4%             | 3    | 6          |
| Somewhat Agree                                    | 1                                 | 2%             | 2    | 2          |
| Disagree                                          | 0                                 | 0%             | 1    | 0          |
| <b>TOTAL</b>                                      | <b>50</b>                         | <b>100%</b>    |      | <b>196</b> |

Description: Average Effectiveness Score for P1:  $196/50 = 3.92$  (Strongly Agree)

Table 3. Effectiveness in Preventing Illegal Fishing Gear

| Effectiveness in Managing Crab Size and Condition |                                   |                |      |            |
|---------------------------------------------------|-----------------------------------|----------------|------|------------|
| Answer Options                                    | Frequency (Number of Respondents) | Persentase (%) | Skor | Total Skor |
| Strongly Agree                                    | 48                                | 96%            | 3    | 144        |
| Agree                                             | 2                                 | 4%             | 2    | 4          |
| Somewhat Agree                                    | 0                                 | 0%             | 1    | 0          |
| Disagree                                          | 0                                 | 0%             | 0    | 0          |
| <b>TOTAL</b>                                      | <b>50</b>                         | <b>100%</b>    |      | <b>148</b> |

Description: Average Effectiveness Score P2:  $198/50 = 3.96$  (Strongly Agree)

Fishermen in Kuala Lupak Village generally have a fairly positive perception regarding the effectiveness of the Minister of Maritime Affairs and Fisheries Regulation Number 7 of 2024, both in regulating crab size and condition and in preventing the use of prohibited fishing gear.

1. Effectiveness in Regulating Crab Size and Condition: With an average score of 3.92, the majority of fishermen (94%) stated "Strongly Agree" that this regulation is very effective in regulating crab size and condition. Another 4% "Agree." This average score indicates a perception of "Strongly Agree" (3.25 - 4.00), indicating that fishermen see the positive potential of this regulation for preserving mangrove crab resources. This aligns with the regulation's goal of maintaining the sustainability and availability of fishery resources.
2. Effectiveness in Preventing the Use of Prohibited Fishing Gear: Similar to the previous point, the average perception score for the effectiveness of preventing the use of prohibited fishing gear was 3.96, also in the "Strongly Agree" category. Ninety-six percent of respondents stated "Strongly Agree," and four percent stated "Agree." This indicates fishermen's hope and confidence that the regulation can reduce destructive fishing practices. This positive perception is an important basis for compliance with and support for the policy.

Fishermen's perceptions of the effectiveness of this regulation demonstrate optimism that the regulation can bring positive changes to resource sustainability and responsible fishing practices. However, the "Agree" score from some respondents indicates that there may still be room for improved implementation or more in-depth outreach regarding the regulation's actual impact.

Regarding the effectiveness of the regulation, there is a significant discrepancy between fishermen's perceptions or "agree" attitudes toward sustainable management policies and actual community practices. Although fishermen agree with the prohibition of destructive fishing gear or fishing below the minimum size, strong economic pressures often drive them to continue using illegal fishing gear (such as arad nets) or catch substandard fish to meet their daily needs. This situation indicates that the effectiveness of a regulation depends not only on cognitive acceptance but also on the ability and willingness of fishers to comply, which is heavily influenced by economic factors and alternative livelihoods (Triyanti, 2021). Therefore, it is important to examine whether the Minister of Maritime Affairs and Fisheries Regulation Number 7 of 2024 has been designed with fishermen's economic dilemmas in mind and to what extent law enforcement efforts and facilitation of alternative livelihoods can increase actual compliance, so that the

regulation is truly effective in achieving its objectives.

**Benefits of the Regulation**

Perceptions of the benefits of the Minister of Maritime Affairs and Fisheries Regulation (Peraturan Menteri Maritime dan Perikanan) Number 7 of 2024 for fishers can be defined as how fishers understand, interpret, and perceive the potential positive impacts of the regulation's implementation on the lives and livelihoods of the community. This goes beyond mere knowledge of the regulation's content; rather, it reflects how each fisherman personally evaluates the potential benefits offered by this new regulation. This perception encompasses the extent to which fishers understand key points in the regulation, such as new rights and obligations or changes to licensing procedures, as well as how the community connects the regulation to personal benefits, such as increased catches or legal certainty. Fishermen's level of trust in the effectiveness and fairness of the regulation's implementation in the field also significantly influences these perceptions, often based on the community's previous experience with government regulations. Overall, these perceptions reflect fishers' subjective understanding of the positive value and constructive impacts the regulation brings to the sustainability of their livelihoods and community well-being, making them a crucial factor in determining the level of community compliance and support for government policies. Results of processing perception data regarding the benefits of the Regulation of the Minister of Maritime Affairs and Fisheries Number 7 of 2024:

Table 4. Benefits by Size/Availability

| Benefits of Regulation |                                   |                |      |            |
|------------------------|-----------------------------------|----------------|------|------------|
| Answer Options         | Frequency (Number of Respondents) | Persentase (%) | Skor | Total Skor |
| Very Helpful           | 47                                | 94%            | 4    | 188        |
| Helpful                | 3                                 | 6%             | 3    | 9          |
| Somewhat Helpful       | 0                                 | 0%             | 2    | 0          |
| Not Helpful            | 0                                 | 0%             | 1    | 0          |
| <b>TOTAL</b>           | <b>50</b>                         | <b>100%</b>    |      | <b>197</b> |

Description: Average Benefit Score:  $197/50=3.94$

Fishermen's perceptions of the immediate benefits of implementing Ministerial Regulation Number 7 of 2024 also tend to be positive. Benefits of Crab Size/Availability: The average benefit perception score related to crab size and availability was 3.94, falling into the "Very Beneficial" category. Ninety-four percent of respondents rated "Very Beneficial" and six percent rated "Beneficial" as experiencing benefits in the form of larger crab sizes or increased availability. This

indicates that most fishers are beginning to perceive or have positive expectations regarding the long-term impact of the regulation on the quality and quantity of the community's catch.

Fishermen in Kuala Lupak Village's perceptions of Ministerial Regulation Number 7 of 2024 can be categorized as positive. The community has good knowledge of the regulation, views it as effective in preserving resources, and perceives its potential benefits. This positive perception is crucial social capital for the successful implementation of sustainable fisheries policies at the community level. It is important to explore further through qualitative analysis why a small proportion only "somewhat agree" or do not fully experience the benefits, as this could indicate challenges or obstacles in implementation on the ground that need to be addressed.

The benefits of the regulation from the perspective of fishers cannot be separated from the context of knowledge and effectiveness mentioned above. This suggests that fishers may have positive perceptions of the long-term benefits of resource sustainability, but in practice, the short-term economic benefits of violating the regulation are often more pressing (Triyanti, 2021). An analysis of the perceived benefits of Ministerial Regulation Number 7 of 2024 on Maritime Affairs and Fisheries must delve deeper than mere superficial agreement. This includes the extent to which fishers identify concrete benefits such as increased sustainable catches, income stability, legal certainty, or environmental protection. It is also important to understand whether these perceived benefits align with the reality experienced or expected by the community, and whether Ministerial Regulation Number 7 of 2024 offers adequate incentives or support to encourage compliance with sustainable fishing practices. Thus, the study can reveal the extent to which fishermen view the Minister of Maritime Affairs and Fisheries Regulation Number 7 of 2024 as a solution that provides real added value for the livelihood and welfare of the community, not just a regulatory burden.

## **CONCLUSION**

**Fishermen's Perception of Regulation (Very Positive)** Fishermen's perception of the Regulation of the Minister of Maritime Affairs and Fisheries Number 7 of 2024 is categorized as Very Positive (average score close to 4.00, on a scale of 1-4). **Acceptance of Benefits:** Fishermen strongly agree that this regulation is beneficial and effective in the long term, especially because the community has felt its impact directly, namely the size of the crabs caught tends to be larger (increasing the selling price). **Understanding of Conservation:** There is adequate understanding of the need for conservation, including the importance of keeping egg-laying crabs and crabs below the minimum size so that resources do not become extinct.

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