

POLICY IMPLEMENTATION ON THE STANDARD SIZE OF BLUE SWIMMING CRAB (*Portunus spp*) CATCHED ON THE EAST COAST OF LAMPUNG

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ABSTRACT

The government has issued a policy on the standard size of blue swimming crabs caught to support fisheries management, but it is difficult for business actors to comply with. This study aims to analyze the implementation of the Regulation of the Minister of Marine Affairs and Fisheries No. 7 of 2024 concerning Blue swimming crab Management on the East Coast of Lampung. The research uses a qualitative approach with a case study method, with in-depth interviews, participatory observations, focus group discussions, and documentation studies. The analysis of policy implementation examines fishermen's compliance with the blue swimming crab size standards set by the government. The results of the study show that the cause of the difficulty in implementing the blue swimming crab size provisions is the limited supervision and the lack of sanctions for violations. The orientation of fishermen's behavior still focuses on profits and the limitations of fishing technology that are not selective and destructive. The government must involve all business actors in the trading chain of blue swimming crab commodities to unify perceptions and increase fishermen's understanding of sustainable fisheries management policies on the East Coast of Lampung.

Keywords: Policy Implementation; Size Provisions; Blue Swimming Crab, Sustainable Fishery

INTRODUCTION

The availability of blue swimming crabs in nature is greatly influenced by habitat conditions for life and the breeding of blue swimming crabs (Setiyowati *et al.*, 2016). Sustainably-oriented fishing and utilization methods can be a solution to maintaining the availability of blue swimming crabs so that their existence is directly proportional to the improvement of fishermen's welfare (Fajari *et al.*, 2016). The decision of the Ministry of Marine Affairs and Fisheries of the Republic of Indonesia No. 70 of 2016 concerning the blue swimming crab Fisheries Management Plan (Rencana Pengelolaan Perikanan/RPP) in the Fisheries Management Area of the Republic of Indonesia (Wilayah Pengelolaan Perikanan-

Republik Indonesia/WPP-RI) aims to realize sustainable blue swimming crab management. This policy can build a blue swimming crab management system so that blue swimming crabs are always available and can be used continuously (Ihsan *et al.*, 2015).

The blue swimming crab problem focuses on management that does not pay attention to sustainability aspects. Huda *et al.* (2021) explained that managing this resource is inseparable from fishing practices that damage the environment. Other causes are the use of non-selective fishing gear (Hufiadi, 2017), the destruction of the habitat of the blue swimming crab, and the high number of fishing fleets (Budiarto *et al.*, 2015). Panggabean and Pane (2018) stated that this has a real impact on the condition of blue

swimming crabs in several areas of Indonesia waters that are over-exploited and fully exploited. Only the Arafuru sea waters in WPP-RI 718 are classified as moderate out of a total of 11 WPP-RI (Suman *et al.*, 2017).

Challenges that are still faced in blue swimming crab management include the use of fishing gear that is not environmentally friendly and the catching of blue swimming crabs whose size is not in accordance with the provisions (Husni *et al.*, 2021). In addition, the destruction of blue swimming crab habitat is a problem that cannot be underestimated. Hasan *et al.* (2021) state that fishermen, as part of fishery business actors, must also be responsible for maintaining the sustainability of blue swimming crabs. Blue swimming crab is a source of livelihood that can increase income so that the standard of living is better (Cendrakasih *et al.*, 2023). In line with this, Putri *et al.* (2020) argue that fishermen should be able to play a role and even be an important actor in the management of blue swimming crabs.

A crucial aspect of blue swimming crab management is the difficulty of implementing the policies that have been prepared (Rusdianto *et al.*, 2023). Tresiana *et al.* (2022) stated that monitoring the implementation of policies is very necessary to obtain a better understanding of the successes, failures, and weaknesses of a policy. She further emphasized the importance of synchronization between government policies and their practices in the field. The gap between regulation and implementation often occurs due to fishers' lack of understanding and involvement in the policy-making process. Fishermen, as the spearhead in the fisheries sector, are expected to adopt and implement this policy (Febryano *et al.*, 2021). Evaluation of the policies that have been issued is very important. Studies in the coastal area of Lampung Bay show that policies not in line with the socio-economic reality of fishermen tend to fail in their implementation (Ani *et al.*, 2017).

Similar conditions also occur on the East Coast of Lampung, which is the largest blue swimming crab-producing area after Central Java and East Java (Cendrakasih *et al.*, 2022). The provisions for blue swimming crab fishing have not been fully implemented, especially at the fisherman level. This study aims to analyze the implementation of the standard-size policy for blue swimming crabs caught on the East Coast of Lampung.

METHOD

The research was carried out in May-September 2024 on the East Coast of Lampung, namely Lampung Timur Regency (Muara Gading Mas Village and Margasari Village), Lampung Tengah Regency (Cabang Village), Tulang Bawang Regency (Sungai Burung Village and Kuala Teladas Village). The research was conducted using a qualitative approach with a case study method. Data was collected through in-depth interviews, participatory observations, Focus Group Discussions (FGDs), and documentation studies. Interviews were conducted with key informants consisting of Community Organizers (CO), Supervisory Community Groups (Kelompok Masyarakat Pengawas/Pokmaswas), Joint Business Groups (Kelompok Usaha Bersama/KUB), blue swimming crab fishermen forums, and the Marine and Fisheries Service of Lampung Province (Dinas Kelautan dan Perikanan Provinsi Lampung/ DKP Provinsi Lampung). The FGD was held by bringing together all stakeholders consisting of elements of the district government, fisheries extension workers, village officials, the Blue swimming crab Entrepreneurs Association (Perkumpulan Pengusaha Rajungan/PPRa), Non-Government Organizations (NGOs), KUB, and Pokmaswas. The data was analyzed using the Problem Tree Analysis method to see the implementation of the standard policy of blue swimming crab catch size on the East Coast of Lampung.

RESULTS AND DISCUSSION

Conditions of Blue Swimming Crab Fishing on the East Coast of Lampung

The East Coast of Lampung is one of the fisheries centers in Lampung Province. This area includes four districts, namely Mesuji, Tulang Bawang, Lampung Tengah, Lampung Timur, and Lampung Selatan Regencies. The length of the coastline reaches 270 km, which is the longest coastline of the other four coastal areas of Lampung (BPS Provinsi Lampung, 2023).

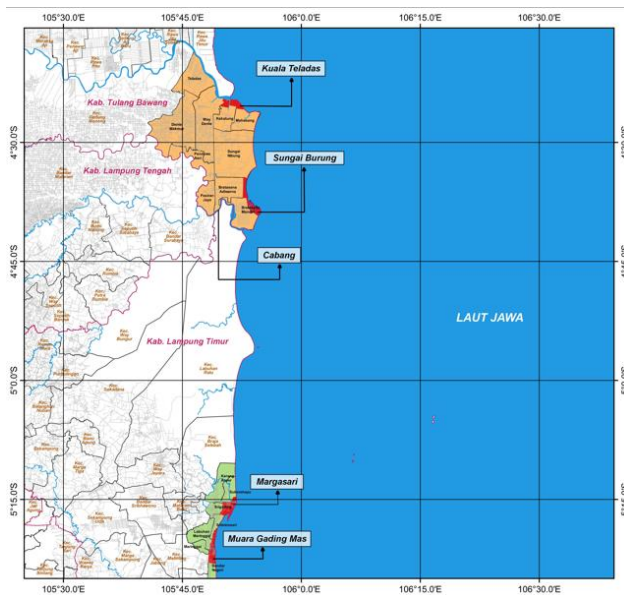


Figure 1. Research location on the East Coast of Lampung

The waters of the East Coast of Lampung are a habitat for the growth and reproduction of various types of biota. The topography of the coastal area is sloping with a sandy, muddy soil structure, has an average depth of 5-10 meters, and the current tends to be calm. Various types of fish can be found in this region, such as butterfish, snapper, kurisi, mackerel, shrimp, kuniran, squids, and blue swimming crab. Several rivers, such as Way Sekampung, Way Seputih, Way Tulang Bawang, and Way Mesuji, emptied into the East Coast. In the estuary or downstream, a mangrove ecosystem is ideal for various types of plants and animals, including blue swimming crabs. This is in accordance with research conducted by Iksanti *et al.* (2022), which found that the blue swimming crab is located at a depth of 5-15 meters.

The types of non-target fish caught in Labuhan Maringgai and Kuala Penet were identified as having the same species, as many as 21 species. This bycatch is in the form of types of fish that can be used and fish that have no economic value. Fish that can be used are those that can be consumed so that they can be sold. In the waters of Labuhan Maringgai, 15 species of non-target fish (11.40%) are classified as retained species that are consumed or sold. The other six species (0.89%) were categorized as non-target discarded species or untapped fish and were often discarded. As for the types of fish caught in the waters of Kuala Penet, 14 species (8.76%) are classified as retained species, and seven other species (1.28%) are

categorized as discarded species. Zairion (2019) stated that fishermen who use basic gill net fishing gear catch more fish, while blue swimming crabs are only a by-product.

Fishermen on the East Coast of Lampung, especially fishermen from Muara Gading Mas Village, Margasari Village, Cabang Village, Sungai Burung Village, and Kuala Teladas Village, usually carry out blue swimming crab fishing operations in the waters of Way Kambas and its surroundings. According to Azkia *et al.* (2022), blue swimming crabs are a multigear species, which is a species that can be caught with various fishing gear. The fishing location factor is one of the important factors that determine the catch of blue swimming crabs. The fishing ground can be predicted by knowing the oceanographic parameters such as depth, current, salinity, and water temperature. The location of the installation of fishing gear can reach a distance of 15-24 miles from the shore.

The types of fishing boats used by fishermen on the East Coast of Lampung are asco and pampang types. Asco ship made of wood, with a length of 14 meters, a width of 1.5 meters and there is a shelter hut. Capacity of 4-5 GT and engine power of 28-30 HP. The asco-type ship can load 1,000–1,500 units of fish trap (in local terms it is called "bubu") with a crew of three people. Meanwhile, the Pampang type ship is made of wood, has a length of 11 meters and a width of 1.2 meters. Pampang ships use engines with a power of 24-30 HP and uses fishing equipment in the form of gill nets, which can carry 5-8 units of nets with a crew of two people. Each unit of the net is capable of reaching a span length of 1,000 meters (1 km). Hufiadi (2017) explained that folding bubu ships operating in North Coast of Java (Pantai Utara Jawa/ Pantura), Sumatera, and Kalimantan have different characteristics: facilities, operational systems, and yield sizes. Folding bubu ships in the waters of Sumatra or Kalimantan generally have larger ship dimensions than blue swimming crab bubu ships that operate in the North Coastal Waters of Java. Ekawati *et al.* (2019) stated that the most blue swimming crab fishing vessels on the East Coast of Lampung came from Labuhan Maringgai, namely 55.56%, Kuala Penet 13.33%, while from Sungai Burung and Kuala Teladas 11.11% and 8.89% respectively came from Seputih. The location of blue swimming crab fishing by fishermen in the five villages can be seen in Table 1.

Table 1. The location of fishing for fishermen's blue swimming crabs on the East Coast of Lampung.

No	Location	Regency
1	Penat	Lampung Timur
2	Pasir Panjang	Lampung Timur
3	Katesan	Lampung Timur
4	Tanjung Bohong	Lampung Timur
5	Pedamaran	Lampung Timur
6	Bunut	Lampung Timur
7	Gambas	Lampung Timur
8	Sekapuk	Lampung Timur
9	Sekopong	Lampung Timur
10	Wako	Lampung Timur
11	Wako Gubuk	Lampung Timur
12	Gusong Sahbandar	Lampung Timur
13	Pulau Segamat	Lampung Timur
14	Lampu Merah	Frontier of Lampung Timur and Lampung Tengah
15	Seputih	Lampung Tengah
16	Sungai Burung	Tulang Bawang
17	Tanjung Nibung	Tulang Bawang
18	Luar Beton	Tulang Bawang
19	Gusong Abadi	Tulang Bawang
20	Gusong Cetek	Tulang Bawang
21	Kelip	Tulang Bawang

Source: FGD blue swimming crab Fishermen group.

Fishermen's activities of spreading nets or installing bubu are carried out during the day, usually between 13.00–14.30 WIB. Azkia *et al.* (2022) explained that bubu is a fishing tool in the form of a trap in the form of a rectangle filled with bait to attract blue swimming crabs to enter the trap. This bubu will be left for 12–16 hours. Then, the fishermen returned home and came back the next day at 03.00–04.00 WIB. This routine fishing activity is usually carried out by fishermen who are located not far from their residences (settlements). However, if the distance is long, fishermen will usually stay for 5–6 days (the local term "babang"). The capacity of the ship used \leq 5 Gross Tonnage (GT).

Blue swimming crab is generally available from December to May every year, which is called the "western season" by local fishermen. In the first three months, namely October, November, and December, blue swimming crabs are generally caught small (baby crabs), while super-sized blue swimming crabs begin to be caught in mid-December to February. This is in line with the results of Ekawati *et al.* (2019), who state that

the blue swimming crab fishing season on the East Coast of Lampung is divided into three, namely the peak season, medium season, and famine season. The blue swimming crab fishing season in Indonesia generally occurs in the western season, and the current speed is positively correlated with the number of blue swimming crab catches in the waters of Lasongko Bay and Lampung Timur. Not only that, East Coast fishermen also catch various types of fish in a period of one calendar season. The types of fish caught by fishermen in five villages on the East Coast can be seen in Table 2.

Table 2. Types of fish caught by blue swimming crab fishermen on the East Coast of Lampung

Season	Moon	Types of Fish		
West	December	1. Blue swimming crab (<i>Portunus spp/rajungan</i>) 2. Squid (<i>Loligo sp/cumi</i>) 3. Octopus (<i>Octopus spp/gurita</i>) 4. Cuttlefish (<i>Sepia officinalis/sotong</i>) 5. Anchovies (<i>Stolephorus indicus/teri</i>) 6. Kurisi (<i>Nemipterus japonicus/kurisi</i>) 7. Mackerel (<i>Scomberomorus maculatus/tenggiri</i>) 8. Gutters (<i>Scomberoides lysan/talang-talang</i>) 9. Giant Trevally (<i>Caranx lugubris/simba</i>) 10. Snapper (<i>Lutjanus sp/kakap</i>) 11. Grouper (<i>Epinephelus sp/kerapu</i>) 12. Jenaha Fish (<i>Lutjanus argentimaculatus/jenaha</i>) 13. Stingrays (<i>Dipturus batis/pari</i>)		
	January			
	February			
	March			
	April			
	May			
	East		June	1. Long Jawed Mackerel (<i>Restrelliger kanagurta/kembung</i>) 2. Banana shrimp (<i>P. merguensis/udang jerbung</i>) 3. White shrimp (<i>Litopenaeus vannamei/udang peci</i>) 4. Green Tiger Prawn (<i>Penaeus semisulcatus/udang krosok</i>)
			July	
			August	
			September	
			October November	

Season	Moon	Types of Fish
		5. Lobster slipper (<i>Thenus orientalis</i> / udang kipas)
		6. Blue swimming crab (<i>Portunus spp</i> / rajungan)
		7. White pomfret (<i>Pampus argenteus</i> / bawal putih)
		8. Black pomfret (<i>Parastrumateus niger</i> / bawal hitam)
		9. Shellfish (<i>Bivalvia</i> /kerang)
		10. Anchovies (<i>Stolephorus indicus</i> / teri)
		11. Gizzard Shad (<i>Anodontosma</i> <i>chacunda</i> / ikan Slanget)

Source: FGD blue swimming crab Fishermen group.

During the western season, the types of fish that are widely obtained by fishermen are blue swimming crab, squid, octopus, cuttlefish, anchovies, and kurisi. Meanwhile, mackerel, simba, snapper, grouper, stingrays, and other types of fish only obtain a little. This is in line with the results of research conducted by Yudha *et al.* (2011), which is a type of squid that is in the category of fish that has great potential to be caught by fishermen on the East Coast of Lampung, especially the waters of Tulang Bawang and Lampung Timur. During the eastern season, the catch that is widely obtained by blue swimming crab fishermen is mackerel and various types of shrimp. Meanwhile, for blue swimming crab and pomfret fish, only a few are obtained. The fishing gear used by fishermen depends on the potential of the fish in the season. Based on information from blue swimming crab fishermen, the type of fishing gear used depends on the presence of the fish that are most likely to be caught.

"The fishing gear we use will adjust to the estimated fish that can be obtained in those seasons, and we also modify the size of the net. For fish, it is usually 2 inches in size".

Compliance with Blue Swimming Crab Catch Size Standards

The government, through the Ministry of Marine Affairs and Fisheries (Kementerian Kelautan dan Perikanan/KKP), stipulates the provisions for the size of blue swimming crabs that can be caught in the Decree of the Minister of Marine Affairs and Fisheries

Number 7 of 2024 concerning Lobster Management (*Panulirus Spp.*), Crab (*Scylla spp.*), and Blue Swimming Crab (*Portunus Spp.*). Specifically, the provisions for catching or releasing (exporting) blue swimming crabs are listed in article 12 namely the blue swimming crabs must be in a non-spawning condition, the size of the carapace must be over 10 cm, or the weight is 60 grams, and it is mandatory to use environmentally friendly. Environmentally friendly fishing gear is fishing gear that meets nine criteria for fishing technology based on FAO regulations (1995), namely: 1) Has high selectivity; 2) Do not damage the habitat and breeding grounds of fish; 3) No harm to fishermen; 4) Producing quality fish; 5) Production does not harm the health of consumers; 6) Minimum wasted catch; 7) Fishing gear must have a minimum impact on biodiversity; 8) Not catching fish species that are protected by law or with endangered status; and 9) socially accepted, (Rohadi *et al.*, 2020).

In practice, this provision is very difficult to implement, especially by fishermen. The restriction on the size of blue swimming crabs that are allowed to be caught is closely related to sustainable fisheries management. The minimum size of the blue swimming crabs caught is determined to give the blue swimming crabs a chance to reach adult size and breed. Selectivity is the ability of fishing gear during the fishing process to determine the catch target according to species, target sex, and size, or a combination of all three. Selectivity allows all non-target catches to pass without injury (Food and Agriculture Organization, 1995). Blue swimming crab exploitation in the East Lampung Coast area occurs in almost all habitats and occurs throughout the year (Ekawati *et al.*, 2019). The standard provision for blue swimming crab catch size is an effort to protect the blue swimming crab population so that it remains stable and prevents overfishing. From an economic perspective, this regulation is actually a way to ensure that fishermen can continue to do their business in the long term.

Non-compliance with blue swimming crab size restrictions is a major problem in sustainable blue swimming crab management. The violation of the arrest provisions is triggered by a marketing system that always requests blue swimming crab goods or products of all sizes. This causes fishermen to continue to catch randomly and do not select their catches. The result is the threatened stock of blue swimming crabs in nature and

the low quality of blue swimming crabs. The reduced availability of blue swimming crabs in nature is due to overfishing. Overfishing is utilization that exceeds the Maximum Sustainable Yield (MSY). Mayu *et al.* (2021) inform the results of the MSY analysis of the Schaefer model, namely the estimated MSY value of blue swimming crab resources of 7,627 kg/year with an optimum effort of 820 trips/year. If this continues to happen, the ones who feel the most significant impact are small fishermen because it is very correlated with their income and welfare.

The characteristics of how to catch blue swimming crabs may be the same or different in each region. Fishermen on the East Coast mostly use a net size of 3.0–3.5 inches (1 inch = 2.5 cm). This is in accordance with research conducted by Zairion *et al.* (2019), that the length of nets used by fishermen in the Margasari and Muara Gading Mas Village areas varies between 1.8–3.6 km, with the height of the nets between 70–90 cm. The mesh size used by fishermen generally ranges from 3.0-4.0 inches, but the more dominant size is 3.0-3.5 inches.

To get super quality blue swimming crabs (in local terms called "AS size") are located quite far away, which is 15 – 24 miles from the beach. Putri *et al.* (2021) said that the distribution of blue swimming crabs based on the size of the carapace is very related to their swimming ability. The larger the size, the more it can tolerate strong waves in deep waters. Blue swimming crabs have migratory behavior during the spawning season. Females that incubate eggs (ovigerous) will swim to deeper waters. Generally, fishermen who hunt large blue swimming crabs and lay eggs must use a more adequate fleet. To reach these longer distances, the required ship capacity must be large enough, and the size of the mesh used must be at least 4 inches. The problem of compliance with the provisions on the size of blue swimming crabs that are allowed to be caught, based on the analysis of the problem tree, is presented in Figure 2.

Figure 2. Blue swimming crab size adherence based on problem tree analysis

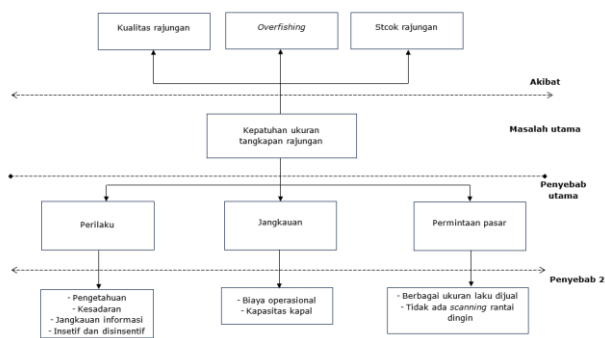
The reason most fishermen who do not implement the size according to the provisions is as the results of the following in-depth interviews with blue swimming crab fishermen:

"To get blue swimming crabs with super quality, the net used is at least 4 inches in size. Super blue swimming crabs are mostly in the middle of the sea; to reach the location, it takes 4-5 hours. The ship used must be large in size and usually an asco ship type. The farther away the arrest location, the higher operational costs are needed. In addition, it is impossible to go on one fishing trip, leaving in the afternoon and returning again in the morning. We here mostly use boats with a type of plank, which is only able to carry nets with a capacity of 5-10 piss, with a maximum mesh size of 3.5 inches. Usually, the one who uses the fishing gear (4 inches) is the Andon fisherman".

According to most fishermen, it is almost impossible to apply the weight and size of blue swimming crabs. This is in accordance with the information obtained from the results of the interview of blue swimming crab fishermen as follows:

"We are aware and understand and even voluntarily to release the caught egg-laying blue swimming crabs. However, it is still difficult to remove it immediately. What else has been caught quite a lot. Usually, those caught by nets are difficult to release again because it takes time, effort, and sometimes dead conditions. At the same time, the type of bubu fishing gear has a chance of still being possible because it is taken in a super or large size".

The information above illustrates that fishermen need more effective fishing gear to be able to obtain blue swimming crabs according to the provisions. It is meant to be effective as a fishing device that does not require much effort to operate but provides optimal catch. In sustainable fisheries management practices, bubu's selectivity is actually better, and the catch mortality rate is low. In addition, bubu generally has a low negative impact on the bottom habitat of the water. Bubu does not cause problems and is efficient, and the quality of the catch is excellent (FAO, 2002). Azkia *et al.* (2022) stated that many fishermen use bubu because the catch obtained from bubu is intact, fresh, and has a high selling value.



The catch of blue swimming crab fishermen is unstable throughout the year. Fishermen get the largest catch from February to May, but the percentage of super and non-super quality is 50% compared to 50%. This data was obtained from fishermen's interviews as follows:

"If we follow the provisions for the weight of blue swimming crabs that are in accordance with the weight rule of 60 grams/head, the average we catch based on the weight of the blue swimming crabs is 60 – 70 grams. Super blue swimming crabs (USA) are usually caught in the peak season, namely February – May, with a percentage of up to 50%. For small blue swimming crabs that are caught, usually at the beginning of the season, namely December – January, even if you want to present or on average, only about 10% of super blue swimming crabs are ".

Fishermen are worried that if the size of blue swimming crabs is restricted, the catch will be reduced by 50% and even drop by only 10% from December to January so the decline in this catch will have an impact on fishermen's income.

Regulation of the Minister of Maritime Affairs and Fisheries No. 7 of 2024 in substance aims to maintain the sustainability of fishery resources and improve the welfare of fishermen, business actors, and the community. This regulation can encourage the acceleration of cultivation technology transfer, investment development, optimization of non-tax state revenue, increase of state foreign exchange, and development of blue swimming crab cultivation (*Portunus* spp.).

Fishermen's non-compliance with the provisions of blue swimming crab size standards that occur on the East Coast of Lampung is inseparable from the use of fishing gear that is not selective. In this water area, fishing gear that is not environmentally friendly is still found, namely types of trawl, arad, scallop garok, sondong and cantrang. This type of tool is very massive and not selective against various kinds of fish and biota. In addition, these tools catch various types of fish and blue swimming crab sizes, from sizes that are not yet suitable for trade to super sizes. The operation of the arad net is suspected of dredging resources to the bottom of the waters. Marine life is small in size, and coral reefs are dragged by the movement and pull of the net. In addition to causing environmental damage, the use of arad nets

often causes social conflicts between fishermen (Indrawasih *et al.*, 2009).

In general, blue swimming crabs that are caught or trapped by basic gill nets and bubu still have good selectivity. However, what needs to be considered is that the size of the net or the size of the bud used must be adjusted to the size of the targeted blue swimming crab. According to Mardhan *et al.* (2019), the use of fishing gear using a type of gillnet net with a net size of 4 inches can catch adult blue swimming crabs with an average size in the width range of > 81-157 mm.

In the Decree of the Minister of Marine Affairs and Fisheries Number 7 of 2024, supervision of blue swimming crab management is carried out on their catching, cultivation, and distribution activities. In article 17 paragraph 2, it is explained that the supervision of blue swimming crab fishing is more administrative, such as checking the documents of the blue swimming crab fishermen, the certificate of origin, and the suitability of the fishing location. This regulation does not stipulate non-administrative supervision procedures. Direct supervision is not carried out on the results of the catch based on the size and type of fishing gear used by fishermen. The size of the blue swimming crab caught, and the fishing gear should be indicators of the success of the sustainable blue swimming crab management policy. Suryawati *et al.* (2023) stated that blue swimming crab management involves stakeholders from various levels, both central and regional governments, as well as formal and informal institutions. The institution of blue swimming crab management, which is multi-stakeholder, can facilitate the coordination process. These institutions are divided into several comprehensive institutional clusters and can balance various interests. Nugroho *et al.* (2023) explained that the institutional cluster in question starts from the institution of production, supervision, finance, and marketing of the blue swimming crab.

Sanctions imposed by the government in violation of the provisions of the Decree of the Minister of Maritime Affairs and Fisheries include written warnings, government coercion, fines, freezing, and revocation of business licensing documents. What is meant by the government's coercive actions against business actors who violate the provisions are

the suspension of activities, sealing, temporary reduction or revocation of the arrest quota, and other actions aimed at stopping violations or restoring sustainability. Sanctions in government coercion can be a force in law enforcement. Febryano *et al.* (2021) stated that fishermen are the target of government policies as implementers who will accept and implement policies without conflict (low conflict). The administrative model strategies that can be used are: (1) the implementation of top-bottom policies, such as mobilization and taking up space with fishermen, and (2) the implementation of command and control, such as monopoly on mechanisms imposed by the government. This policy is implemented through control, supervision, and sanctions for rejection or violation (zero minus model).

Policy Recommendations

The problem of blue swimming crab management can become a prolonged conflict between the government and business actors. The central and provincial governments have a great role in setting regulations that will be implemented in the world of blue swimming crab business. Some of the policy recommendations that need to be considered to support sustainable fisheries management are:

1. *Conducting a study of the application of passive fishing technology in accordance with regulations and environmentally friendly to replace fishing tools that violate regulations that are still widely used. The government facilitates the provision of fishing gear technology that is selective on the size of the catch, considering that the ability of fishermen is only limited to how they are used*
2. *Intensive supervision of blue swimming crab management must be carried out in conjunction with applying other articles in the Decree of the Minister of Marine Affairs and Fisheries No. 07 of 2024. The government must be firmly committed to building an effective, efficient, and impartial supervision system*
3. *The blue swimming crab trading system cannot only be viewed from the side of the production chain at the fisherman level. Government regulations and regulations are time to regulate distribution governance, such as: coaches, miniplants/processing industries, exporters, and international distribution. At the distributor level, it is also necessary to provide restrictions, especially the provisions on the size and weight of blue*

swimming crab commodities that are required. If the market still makes market demand for blue swimming crabs below the size in the provisions, then fishermen will still try to meet market demand

4. *The imposition of sanctions in accordance with regulations must be carried out to enforce the protection and preservation of blue swimming crab resources throughout WPP-RI. The implementation of sanctions is proof of the government's seriousness in protecting blue swimming crab resources*
5. *Fishermen who have complied with the rules are supported to obtain convenience in fulfilling adequate facilities and infrastructure and are guaranteed to be marketed with competitive selling values. The implementation of rewards is not new. Several certification bodies that care about blue swimming crab management provide incentives in the form of selling prices and capital assistance for fishermen to develop their businesses.*

CONCLUSION

The success of the implementation of sustainable blue swimming crab management is inseparable from fishermen's compliance with blue swimming crab fishing based on the allowable size standards. The difficulty of fishermen complying with these provisions is due to the limitations of selective fishing gear and concerns about declining catches and income if they follow the size according to the provisions. The involvement of various parties from upstream to downstream by the government is very important in supporting the policy of limiting the size of the blue swimming crab. The system of supervision of regulations and the implementation of sanctions needs to be carried out firmly, absolutely, and explicitly.

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