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Analysis of Surveillance Activities and Strategies to Improve Surveillance of Purse Seine Vessels In WPP-NRI 572 INDONESIA.

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A B S T R A C T

Common violations in the fisheries sector, especially capture fisheries, require monitoring and controlling the activities of fishing vessels in order for the fisheries sector to be sustainable. Illegal, unreported, and unregulated fishing (IUUF) is a global problem that has not been adequately addressed by many countries. The purpose of this study is to determine how much compliance of the seaworthiness of Purse Seine vessels located in WPP-NRI 572. The research method used is the Quantitative Descriptive method, the data collection method of the results of the study includes primary and secondary data. The method used is a data collection method using primary data obtained from interviews and questionnaires. Furthermore, secondary data is obtained from the SIMWASKAN Application. Based on the results obtained when the Thesis Research conducted research on the monitoring of Purse Seine vessels in WPP-NRI 572, it was found that the distribution of Purse Seine vessels based on the number of Gross Tons in WPP 572 was dominated by the size of 131-160 as many as 68 vessel units, 91-130 gross tons as many as 33 vessel units, 161-190 as many as 30 vessel units and 191-230 as many as 27 vessel units.

Keywords: *Fishing Ground, Purse Seine,* VMS, WPPNRI 572.

1. Introduction

Fisheries Management Area (WPP-NRI) 572 covers the western part of the Indian Ocean. Sumatra and Sunda Strait. The fishery potential in the WPP-NRI 572 sea area is very large. Not only large pelagic fish, bottom fish and reef fish, but also small pelagic fish. Annual production can reach 6.26 million tons per year. Indonesia has a large potential fish stock, Indonesia has become the target of fish stock theft by some fishermen from neighboring countries. There before, it is very necessary to monitor fisheries management so that it remains sustainable and sustainable in order to improve the country's economy (Hozairi *et al.*, 2021). Due to its location in the border region, this area is likely to be one of the areas where *Illegal Unreported and Unregulated Fishing* (IUU fishing) occurs.

Based on KP Decree No. 50 of 2017, the Indian Ocean has a high fisheries potential of 1,267,540 tons. The Indian Ocean has the potential for large pelagic fish resources of 630,521 tons per year, while panaeid shrimp is 7,340 tons with a utilization rate for large *pelagic fish* of 1,060 tons and for *panaeid shrimp* of 1,700 tons (Lestari *et al.*, 2016). The Indian Ocean waters are pelagic fish, which is the main catch of Purse Seine fishers, accounting for about 60% of the catch. Common violations in the fisheries sector, especially on board fishing vessels, lead to the need for supervision and control of fishing vessel activities for the sustainable development of the fisheries sector. The amount of fish potential owned by the WPP-NRI 572 area based on research by Arnenda *et al.*, (2021) Fish Tuna, *Skipjack Tongkol*, (TCT) production in WPP RI 572 at PPS Sibolga in 2018, the dominating fishing gear is Purse Seine with a TCT catch of 13,021.829 tons. The overall total catch reached 13,433.369 tons.

Then according to Bramana *et al.*, (2020), explained that WPP 572 and 573 which are located in Indian Ocean waters are known to have the potential for capture fisheries, mainly from pelagic fish groups such as skipjack (*Katsuwonus pelamis*), big eye tuna (*Thunnus obesus*), kite (*Decapterus macarellus*), madidihang (*Thunnus albacerus*), mackerel (*Rastrelliger spp*), and tuna (*Euthynnus affinis*) only now the status is fully exploited. Fishing vessels generally use a log book which is used to record all activities carried out during fishing operations starting from the time of departure, arrival to the estimated catch. Therefore, the compliance and discipline of fishermen in reporting log books with true and honest data will be very helpful in realizing a more measurable capture fisheries management. As for the use of vessel monitoring system (VMS) through transmitters installed on every licensed fishing vessel, this is done as an effort to combat IUU Fishing because the vessel monitoring system itself has vessel coordinate data.

2. Methods

The method used in this research is quantitative descriptive method, as a fact-based problem-solving procedure carried out by means of observation, interviews, and studying documents. Descriptive method according to Prastowo (2011), is a research method that seeks to reveal the facts of an event, object, activity, process, and human. as it is at the present time or a period of time that is still possible in the memory of the respondent. data collection methods the results of the study include primary and secondary data. The method used is a data collection method using primary data obtained from interviews and questionnaires. Furthermore, secondary data was obtained from the Fisheries Monitoring Management Information System (SIMWASKAN) application at the ministry of marine and fisheries (KKP) Fisheries Resources Monitoring and Management.

Sample withdrawal in the study using Purposive Sampling is a non-random sampling method is where the researcher ensures the citation of illustrations through the method of determining special identities that match the research objectives so that it is expected to respond to the research case. In the study using 30 respondents consisting of, 10 purse seine fishermen 5 ship owners and 5 employees of the ministry of marine affairs and fisheries and 10 employees of purse seine vessel supervision in WPPNRI 572, employees So departing from this definition, sampling using purposive sampling method is directed to data collection using questionnaires where in this case the respondents determined are experts or experienced in their fields.

3. Results and Discussion

General conditions

The research location is at the Ministry of Maritime Affairs and Fisheries located on Jl. Medan Merdeka Timur, Gambir District, Central Jakarta, DKI Jakarta. The Technical Implementation Unit (UPT) of the Directorate General of Marine Resources and Fisheries Monitoring (PSDKP) was formed based on the decision of the Minister of Maritime Affairs and Fisheries Number 33 / PERMEN-KP / 2016 concerning the Organization and Work Procedures of the Technical Implementation Unit in the field of marine and fisheries resources supervision.

Vessel distribution data based on the active *Vessel Monitoring System* carried out on Purse Seine vessels in WPP-NRI 572 in the period January 2024, shown in Figure 4.1. as follows:

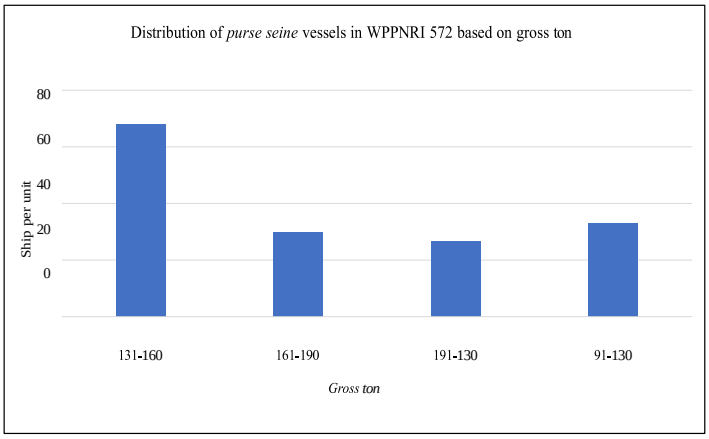

Figure 4.2. Distribution of *Purse Seine* Vessels in WPP-NRI 572.

The results of Figure 4.2. shows that the distribution of Purse Seine vessels in WPPNRI 572 domiciled in gross tons 131-160 as many as 68 units. The number of gross tons will affect the fishing area that will be obtained when conducting fishing operations. according to Aji *et al.*, (2023), explained that the process of catching a stationary ship and the state of rotating and moving settings can affect the catch so that it affects the existing catch. There is an influence of the length of the net on the production of fish catches because the length of the net used will increase the sweep area at the time of fishing. operation, thus affecting the catch.

Potential fish resources are grouped into 9 main commodities, namely large pelagics (*non skipjack tuna*), the percentage of fish resources in WPP-NRI 572 can be seen in Figure 4.3. as follows.

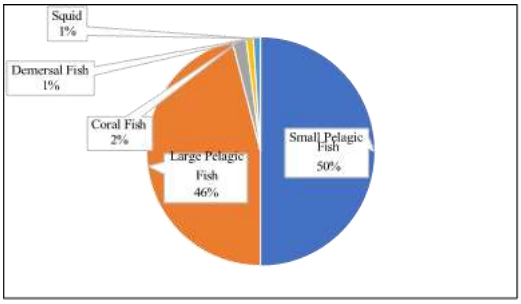

Figure 4.3. Percentage of potential fish resources in WPPNRI 572.

Figure 4.3. explains that fish resources in WPPNRI 572 are domiciled in small pelagic fish as much as 50% and large pelagic fish as much as 46%, reef fish 2%, demersal fish 1%, squid 1%, for panaed shrimp, crab, lobster, in the potential fish resources of WPPNRI-572. The percentage of potential fish resources in WPPNRI 572 is the largest contributor to pelagic fish, the percentage value of small pelagic fish is 50% and large pelagic fish is 46%, the fishery products obtained are directly related to the fishing area which is directly adjacent to the Indian Ocean making the 572 fisheries management area the largest pelagic fish producing waters. According to Jatmiko *et al.*, (2020), pelagic fish in the Indian Ocean waters of WPP 572 and WPP 573 are exploited using six fishing gears, namely charts, gill nets, tonda fishing rods, longlines, purse seines and longlines.

The production results on Purse Seine fishing vessels in 2017-2021 can be seen in Figure 4.4. as follows:

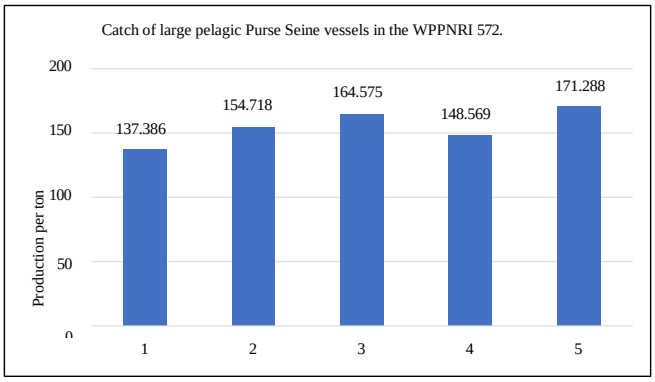

Figure 4.4. Large pelagic production of Purse Seine vessels.

Figure 4.4. the production of large pelagics on Purse Seine 572 vessels over the past five years has fluctuated, the increase occurred in 2017 was 137,586 tons, 2018 was 154,718 tons, and 2019 was 164,575 tons, while there was a decrease in 2015 of 148,569 tons and an increase occurred again in 2021 of 171,288 tons. The Vessel Monitoring System (VMS) application contains documents that assist in supervision, ship licensing documents such as Operational license (SLO), which are useful for fisheries supervision. The analysis carried out on the Operational license (SLO) of Purse Seine vessels is in Figure 4.5.

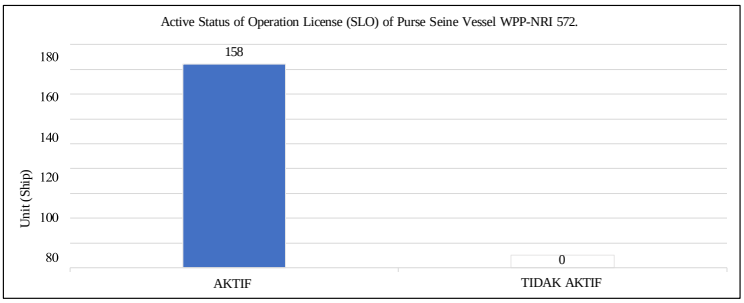

Figure 4.5. Active status of SLO of Purse Seine vessel.

Based on Figure 4.5. shows that the SLO of Purse Seine vessels operating in fisheries management area 572, has an active status on 158 vessels, a total of 158 vessels operating in WPP-NRI 572.

Special conditions

The activity carried out is a monitoring activity carried out with the aim of being able to find out indications of violations committed by Purse Seine vessels in WPP-NRI 572, based on applicable regulations and policies. Based on the results of this monitoring, no violations were found on Purse Seine vessels in WPP-NRI 572. This can be seen in the explanation below:

1. Monitoring KM. Anugrah Maritim

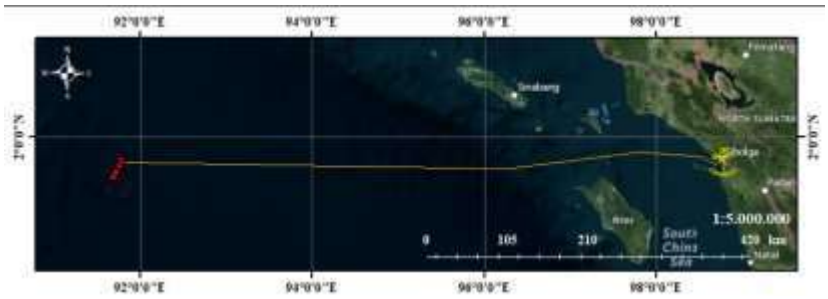

Figure 4.6. Tracking Results of Anugrah Maritim Ship

KM. Anugrah Maritim was observed leaving Bungus Fishing Port, on January 2, 2024. KM Indra Maju was seen conducting fishing activities in WPP-NRI 572 waters until the end date of February 3, 2024. The ship operates in accordance with the applicable Fishing license (SIPI). The ship does not appear to be in violation because there is no indication of turning off the transmitter, tracking the ship in accordance with the operation of fishing gear, namely Purse Seine, SIPI is valid, and fishing grounds (DPI) is in accordance with the permit. The average speed based on color information obtained that the green color with a speed of 6.3 knots, yellow color with a speed of 3.6 knots and red color with a speed of 0.4 knots.

2. Monitoring KM. Bahtera Indah

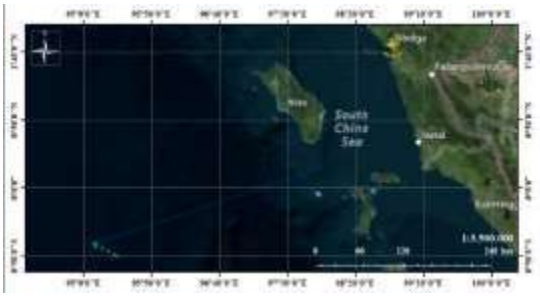

Figure 4.7. Tracking Results of Bahtera Indah Ship

KM. Bahtera Indah Makmur was observed leaving Bengkulu Fishing Port, on January 2, 2024. KM. Bahtera Indah was traveling to the fishing ground and catching in the Indian Ocean. The vessel was operating in accordance with the applicable Fishing License (SIPI). The ship does not appear to have committed a violation because there is no indication of turning off the transmitter, the ship's tracking is in accordance with the operation of the fishing gear, namely Purse Seine, SIPI is valid, and fishing grounds (DPI) is in accordance with the permit. The average speed based on color information is found that green with a speed of 5.9 knots, yellow with a speed of 3.5 knots and red with a speed of 0.7 knots.

The tracking pattern of Purse Seìne vessels can be seen to have a tracking shape with an elongated pattern and form a circular pattern, this is in accordance with the operation of Purse Seine fishing gear which conducts fishing by circling the target catch. The results of the assessment of the qualifications of the types of violations that occurred in this study, occur in the table as follows:

Ship Name	Completion Type				
	Catchment Area	Fishing Gear	Transhipmeìnt	Transmitteìr	Completion Letter
Anugrah Maritim	√	√	√	√	√
Bahteìra Indah	√	√	√	√	√
Bintang Samudra	√	√	√	√	√

Bintang Anugrah Wijaya	√	√	√	√	√
Anugrah Maritim Seìntoìsa	√	√	√	√	√
Indra Maju	√	√	√	√	√
Bintang Samudra Prima	√	√	√	√	√

Note: √ is a passing grade for violation activities.

Based on the results of violations obtained when conducting this research analysis, regarding the monitoring of Purse Seine vessels in WPP- NRI 572, it was found that there were no purse seine vessels that committed violations in WPP-NRI 572 waters.

Based on the classification of the types of violations, namely, among others as follows;

1. Violation of Fishing Lines

Fishing area is an area of water where a fishing gear can be operated perfectly to utilize the fish resources contained therein. Fishing area is one of the determining and important factors that must be known to support the success of fishing operations.

2. Fishing Gear Violations

Fishing gear is a tool used to get the target catch when utilizing fishery resources. An indication of a fishing gear violation is an indication that monitors whether the fishing gear used by fishermen is in accordance with the fishing gear listed on the permit, this is because to minimize the fishing gear used is not environmentally friendly.

3. Transhipment Violations

Transhipment is the activity of transferring the cargo of captured fish resources carried out from fishing vessels to other fish transport vessels carried out in the middle of the sea (*ship to ship*).

4. Transmitter Violation

Transmitter is a tool used as a sensor to determine the position of fishing vessels with a size of more than 30 GT which can later be monitored through the Perikanan fisheries vessel monitoring system (SPKP). Violations of turning off this transmitter often occur, so that fishery vessel inspectors lose track of vessels that are fishing and so that when the ship carries out fishing activities outside of the fishing area inspectors cannot find out information on the position of the ship. Based on the results of the analysis of the inspection of fishing vessels, the following data were obtained:

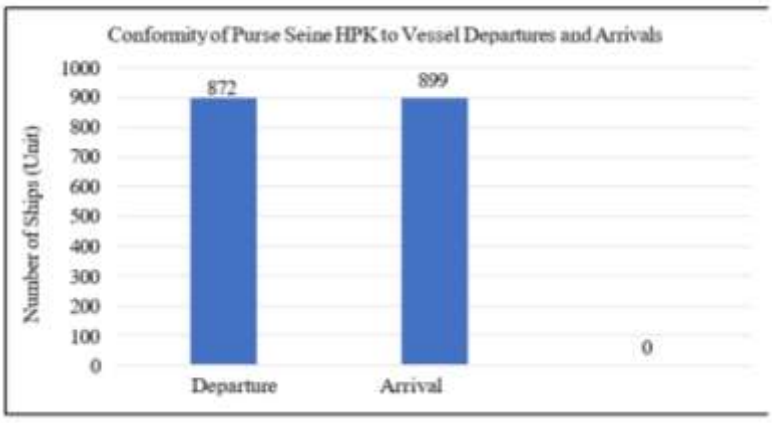

Figure 4.14. Ship inspection result (HPK)

Based on Figure 4.14. explains that the analysis carried out on the suitability of Purse Seine vessels with the results of the inspection there is compliance with the physical documents of the ship. The departure of the Purse Seine ship through the results of the ship inspection there is compliance according to

the physical documents of the ship as many as 872 ship units and the departure of the Purse Seine ship has a compliance level of 899 ship units. This means that the total Purse Seine vessels departing and arriving have a high level of compliance.

Follow-up and Identification of types of violations

Violations committed by Purse Seine vessels refer to *Illegal, Unreported and Unregulated Fishing* (IUUF), which is the main concern of supervision and monitoring in finding solutions and eradication pursued through fishing vessel monitoring activities. Based on the Minister of KP Regulation No. 23 of 2021, regarding SPKP data analysis in Article 30 paragraph 1 reads that the management of data analysis on SPKP through ship monitoring, besides that in paragraph 2 reads that what is referred to in paragraph 1 leads to suspected violations, the management of SPKP which as a result can issue a sanction recommendation letter in accordance with the severity of the type of ship violation. The existence of attention in this case makes the level of monitoring increase, monitoring that must be done through the trend motion pattern carried out.

This research proves the pattern carried out on violations given by the monitoring party using the Vessel Monitoring System which is able to show the level of ship violations and the actions taken on violations. According to Afdini (2021), that violations committed such as illegal fishing committed by Indonesian fishermen such as not landing the catch at a predetermined base, fishing line, transhipment, turning off VMS and AIS and using prohibited fishing gear. Based on the classification of the types of violations, among others, as follows;

1. Violation of the fishing line

Law Number 11 of 2020 concerning Job Creation states that every person who conducts capture fisheries business must comply with the provisions regarding fishing lines and WPP-NRI. If, there is a violation of the fishing line, a maximum criminal sanction of 100,000,000.00 will be imposed, while if there is a violation of WPP-NRI, a maximum sentence of 8 years and a maximum fine of Rp. 1,500,000,000.

and small fishermen will be punished for a maximum of 1 year and a maximum fine of Rp. 250,000,000. Violations that occur in WPP 572. based on monitoring and follow-up on sanctions given to violators as follows:

1. Reprimand or warning is given to violators with a note that the fishing vessel is the first time violating.
2. Disabling the validity period of the SIPI for 90 days starting from the day the offense is committed when committing a second offense.
3. Revocation of SIPI is carried out if the fishing vessel commits a third offense.

2. Licensing violations

Government Regulation No. 5 of 2021 concerning the Implementation of Risk-Based Business Licensing states that violations of WPP-NRI will be given administrative sanctions as well as written warnings/reprimands, government coercion, administrative fines, suspension of business licenses, and revocation of the following licenses:

1. Warning/reprimand is imposed if the first time a violation is committed, has not yet had an impact on damage and loss of marine and fisheries resources, has no impact on human safety and health, and the impact caused can be easily repaired. This sanction contains an order to immediately comply with business obligations in accordance with the provisions within a certain period of time. This sanction can be given a maximum of 2 times and this sanction can coincide with government coercion.
2. Government coercion is imposed if there is a threat to human health and safety, impacts on economic, social, and cultural aspects, as well as damage and losses to the preservation of fish resources and the environment. Types of government coercion are in the form of temporary suspension of activities, sealing, site closure, demolition of buildings, reduction or temporary revocation of quotas and fishing locations and other actions.
3. Administrative fines are imposed on perpetrators who do not implement the second written warning or government coercion. Administrative fines can be imposed without being preceded by other administrative sanctions if sufficient preliminary evidence is found to deliberately ignore all business licensing requirements and the violations committed cause damage and losses to marine and fisheries resources, safety and human health. Administrative fines are given with a formula of 1000% multiplied by ship production multiplied by the highest fish benchmark price multiplied by the gross tonnage of the ship multiplied by the number of operating days.
4. Suspension of business licenses is imposed if the business actor does not carry out its obligations until the expiration of the second written warning and does not pay the administrative fine imposed. Suspension of business licenses can be imposed directly if the business actor does not implement government coercion. Business license suspension contains an order to immediately comply with the required business license obligations and carry out repairs to the damage and losses caused. Suspension of business licenses is imposed for a certain period of time by considering the ability of the perpetrator to fulfill its obligations and provide a deterrent effect.

Component Analysis and SWOT Analysis Factors

The analysis carried out on the analysis of Purse Seine vessels operating in WPP 572 is carried out by means of SWOT analysis, matrix of Internal strategic analysis factors and External strategic analysis factors.

1. Analysis using SWOT

Analysis conducted to determine whether the relationship between supervision activities and strategies for improving Purse Seine vessels in WPP-NRI 572 has an effect on SWOT analysis. SWOT analysis is used to see the strengths, weaknesses, opportunities and threats that will be faced by the government/fisheries companies. By looking at the strengths possessed and developing these strengths, it can be ascertained that the government/fisheries company will be more advanced than existing competitors. Likewise, the weaknesses must be improved so that the company can continue to exist. Opportunities that exist must be utilized as well as possible by the Company so that sales volume can increase. And the threats that will be faced by the company must be faced by developing a good marketing strategy (Tamara, 2016).

2. Internal Factor Analysis

The analysis was carried out to determine whether the relationship between supervision activities and strategies for improving Purse Seine vessels in WPP-NRI 572 had an effect on Internal analysis. In Table 4.2. analysis of internal factors conducted interviews with PSDKP employees and fishermen. Having strength factors (*strenghts)* by paying attention to statutory regulations to take firm action against every perpetrator of unlawful fishing, unreported and destructive fishing, quality related to human resources at PSDKP is a bachelor's degree (S1), and has been trained in supervisory skills.

Contribution of the patrol budget from the state budget through the Ministry of Marine Affairs and Fisheries. The availability of the PSDKP office in the Jakarta area, with a strategic location and the service provided by the officers is very good for the servants who take care of the ship licensing documents. As for the weaknesses of internal factors, they consist of the government's involvement in coordination to carry out patrols effectively and efficiently. PSDKP has not optimized supervision at sea in coordination with other agencies. Limited operating fleet in checking and patrolling fishing vessels operating in WPP-NRI 572. According to Tripomo and Udan (2005), explaining that the strategy of internal factors in identifying strengths (*strenghts*) and weaknesses *(weaknesses*) of research results with standard weights used ranging from 0.0-1.0. The analysis is presented in Table 4.2 as follows:

Table 4.2. Internal factor analysis of purse seine vessel surveillance WPPNRI-572.

Internal Factors		Weight	*Rank*	Score
Strenght				
1.	Availability of Law Regulations	0.28	3	0.098
2.	Good Quality of Officer Resources	0.25	2	0.125
3.	Availability of Integrated Supervision Service Office	0.28	4	0.104
4.	Government Contribution to Support PSDKP Activities	0.25	4	0.125
5.	Age of Fishermen is Still Productive	0.20	3	0.523
6.	Purse Seine is The Right Fishing Gear for Pelagic Fish	0.12	3	0.123
(Weakness)				
1.	The Government's Involvement in Providing Counseling to Boat Owners/Fishermen is Not Maximized.	0.28	2	0.104
2.	Patrol Equipment Facilities are Not Optimized	0.25	2	0.125
3.	Limited Operating Fleet	0.23	2	0.118

4.	Fishermen's Skills in Conducting Fishing Against Existing Regulatory Regulations/Policies	0.10	1	0.062
5.	Fishermen's Knowledge of Regulations is Not Good	0.05	1	0.053
6.	Suboptimal Service Posts for Complaints of Violations in Each Region	0.21	1	0.120
	Total Amount	1.0	28	1,931

Based on the results of research conducted on the analysis of supervision relationships and strategies for improving Purse Seine vessels in WPP-NRI 572 getting internal factors with a strength value with a score of 1,931 this shows that the policy strategy towards supervision is in a positive or strong position in conducting supervision of fishing vessels including the maximum category.

The analysis was conducted to determine whether the relationship between supervision activities and strategies for improving Purse Seine vessels in WPP-NRI 572 had an effect on Internal analysis. Analysis conducted on external factors is presented in Table 4.3 as follows: Table 4.3.

Analysis of external factors on the supervision of purse seine vessels in WPPNRI-572.

The analysis was conducted to determine whether the relationship between supervision activities and strategies for improving Purse Seine vessels in WPP-NRI 572. affect the results of the SWOT analysis. The results of the analysis conducted in this study show that the strategy for supervision activities and the strategy for increasing Purse Seine vessels in WPPNRI get in quadrant 1, namely strength. The development of surveillance activity strategies that can be carried out is to take advantage of existing strengths and opportunities, and minimize weaknesses and threats, the strategies that can be taken consist of: SO (*Strenght Opportunities*) strategy: includes strengthening cooperation with fishermen, improving relations with port employees. WO (*Weakness Opportunities*) strategy: increase the loyalty of supervision and port employees. Strategy ST (*Strenght Treaths*): consists of establishing cooperation between other ports to establish policies and improve service quality. WT (*Weakness Treath*) strategy: implementation of increased promotion through various effective and efficient marketing of SLO registration policies and procedures.

Analysis of opportunities and threats, analysis of opportunities includes government support for supervision is increasing, the level of compliance of fishermen is increasing and the formation of Fisheries Monitoring Community Group (POKMAWAS). The threat to the lack of security of Indonesian waters and the lack of optimal coordination of supervision in Indonesian seas and the consumptive lifestyle of fishermen motivate fishermen to carry out fishing activities who want to maximize the catch of each trip. According to Tripomo and Udan (2005), stating that external factors come from strategic opportunities and threats. of strategic opportunities and threats, the EFAS matrix has a scale of 4 (*out standing*) to 1 (*poor*) for opportunities, the value of the twig that the given threat is the inverse of the value.

3. External Factor Analysis

External Faktor		Weight	*Rank*	Scoìreì
Opportunities				
1.	Increased Government Support For Supervision Activities.	0.19	4	0.078
2.	Fishermen's Compliance Rate Increases	0.60	3	0.241

3.	Formation of POKMAWAS (Fisheries Monitoring Community Group).	0.60	4	0.225
4.	People's Need For Fish Consumption is Increasing	0.20	4	0.432
5.	The Level of Compliance With Applicable Laws Has Increased	0.20	3	0.400
Treath				
1.	Indonesia's Lack of Maritime Security	0.60	1	0.239
2.	Lack of Coordination of Surveillance in Indonesian Seas	0.70	2	0.263
3.	A Very Consumptive Pattern of Fishermen When Fishing	0.60	2	0.238
4.	Andoìn Fishermen Who do Not Have License Documents to Conduct Fishing Operations	0.12	3	0.240
5.	Foreign Vessels Committing Offenses (*Illegal Unreported and Unregulated Fishing /IUU fishing*).	0.12	3	0.240
Total Amount		1.00	28	2,050

Based on the results of research conducted on the analysis of supervisory relationships and strategies for improving Purse Seine vessels in WPP-NRI 572 getting external factors with a strength value with a score of 2,050, this shows that the policy strategy towards supervision is in a positive or strong position in conducting supervision of fishing vessels including the maximum category. The following is a display of the quadrant results generated from the IFAS and EFAS calculations, which are as follows;

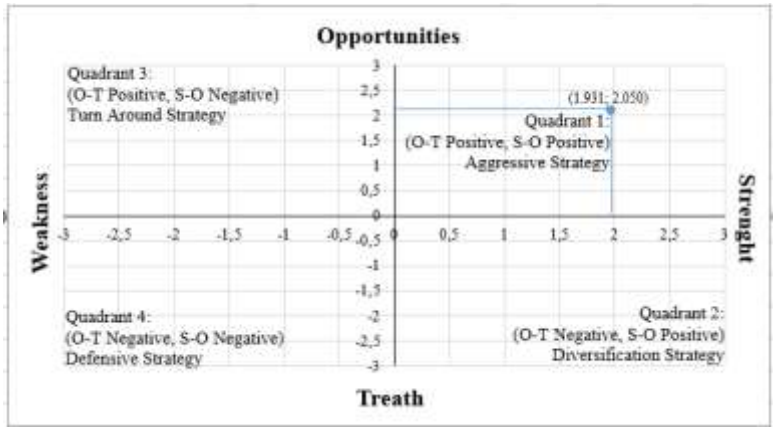

Figure 4.14. SWOT Analysis

The analysis conducted shows that the analysis of supervision activities and strategies for increasing Purse Seine vessels in WPP-NRI 572 shows in quadrant 1, namely an aggressive strategy on strengths with a value of 1,931 and 2,090. There are several considerations generated in showing quadrant points, namely considering the results of the calculation of the assessment of the value of internal factors and the value of external factors in the SWOT analysis. Identification analysis of the proportion of the level of violations and fishing vessel surveillance strategies carried out Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis (Rangkuti, 2005; Ihsan *et al*., 2015). It goes on to say that objectives and strategies aim to improve the quantitative database of the strategic planning process. SWOT analysis serves as an initial source of information in forming a strategy analysis.

Development of surveillance strategies for purse seine vessels operating in WPPNRI 572, to support fisheries activities nationally and is expected to have an international reputation for the Purse Seine vessel monitoring system in WPPNRI 572. Strategy is increasingly important for various surveillance agencies to develop competitive advantages so that the monitoring of fishing vessels not only survives, but can also maintain violations of purse seine vessels. And also the need for a development of the quality of human resources, namely the supervisors who are in the field, such as being given a training and intelligence provided periodically in a certain period that serves to be able to improve and ensure the quality of the supervisors on duty in the field.

4. Conclusions and Suggestions

Based on the results of the analysis carried out, conclusions can be drawn, namely the fishing procedures of Purse Seine vessels in WPP 572 can be monitored by looking at the tracking motion pattern of the ship and checking the completeness of the letter at the time of departure of the ship.

Furthermore, the distribution of Purse Seine vessels based on the number of Gross Tons in WPP 572 is dominated by the size of 131-160 as many as 68 vessels, 91-130 Gross tons as many as 33 vessels, 161-190 as many as 30 vessels and 191-230 as many as 27 vessels.

And then to find out the results of the analysis carried out, it shows that there are several conclusions obtained from the results of the SWOT analysis, namely the need for the development of surveillance strategies for purse seine vessels operating in WPPNRI 572, to support national fisheries activities and it is hoped that the results of the SWOT analysis will be able to support the development of purse seine vessels. has an international reputation for the Purse Seine vessel monitoring system in WPPNRI 572.

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