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## **Enables Indonesia Scanning the Challenges of Fisheries Development in a Time of Pandemic**

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### **Abstract**

The COVID-19 crisis has created the novel law enforcement challenges that different approach must take in order to address risk of non-compliance. Amidst the pandemic, these days monitoring and enforcement will be fully depended on how each State enables to overcome law-breaking activities against sustainable fishing. It argues that while Indonesia government has ordered to sustain productivity and fish harvesting in a time of pandemic, some off-shore fisheries with targeting highly migratory fish such as tuna catch, look like they are going very strong. Large fishing boats that can process and freeze fish are staying out at sea. The outcome reveals that while the cops are watching closely national marine territory, however, examination of law enforcement in high seas fishing, as for Indonesia interest, is not that pronounced. Indonesia need to consider some modified enforcement against those non-compliances by conducting investigation in the particular fishing area to scan possible non-compliance acts that shall take place.

**Keywords:** enforcement, Indonesia, pandemic, fisheries challenges

### **1. INTRODUCTION**

The ocean is the least patrolled terrestrial domain. With the global economy in a critical downturn due to corona virus crisis, it seems likely many governments will be even less motivated to regulate nefarious behavior at sea. Moreover, the highly migratory fishing should be a concern since the fishing area is not only cover one country marine area but extend to high seas. For the time being, Indonesia has been working to catch illegal fishing vessel massively. The enforcement agents are specially monitoring illegal fishing in weak spots where illegal fishermen can exploit. During the country shutdown, the authority has caught around 19 illegal foreign vessel within one and half month in national fishing management area (Fika Nurul Ulya, 2020).

How do we keep an eye on migratory fish, such as tuna that swims freely in the vast, borderless oceans? The international context has shifted the enforcement matter challenging and complex. This took the form of the Regional Fisheries Management Organizations (RFMOs), who were tasked with supervising the catch of highly migratory species. In the meantime, the flag State exclusive jurisdiction over ships on the high seas is likely seemed as difficulties by RFMOs to control fishing by rogue nations (Holly Doremus, 2012:31). Regardless the adoption of international law instrument and conservation treaties, many fisheries area are still in a critical state as

certain flag States continues to enable and perpetuate excessive and destructive fishing (Rosello, 2017).

Instead of the change on overfishing driver, the pandemic shutdown performs overfishing dangers in the near time. As Bradley Soule stated that it is not likely that a temporary and involuntary shutdown would fundamentally alter the behavior of an entire industry. Large fishing boats that can process and freeze fish are staying out at sea and they will fish more (Tristram Korten, 2020).

Of all priorities to detect illegal fishing conducted by foreign vessel within national marine water, it seems there are two speculation remained in related to law enforcement. First, the consideration of extended fishing area beyond national jurisdiction. Second, Indonesia fishermen using national fishing vessel who operate in high seas fishing business. From these two issues, fishing on highly migratory species open the map to consider what is ahead and track which area that might be neglected by law enforcement.

In this article, we contribute to literature on the legal aspect of fishery data collection and how the sustainable fisheries policy by Regional Fisheries Management Organizations work against various barrier to ensure compliance of member States fishing in high seas. We examine highly migratory species fishing area within and beyond Indonesia jurisdiction and what is international obligation that Indonesia must apply to national action. In so doing, we analyze possible nefarious activities and impediment factors then finally it may lead to a thinking on how these things shall be crucial problem in this shutdown period to be considered for modifying fishing enforcement.

## **2. DISCUSSION**

The Indonesian government has not issued yet special regulation for high seas fishing activities during pandemic, thus, fishery is likely considered as normal times. Considering the current situation caused by corona virus crisis, the demand for frozen and processed seafood have dramatically increased while eliminating fresh caught products. This appeared as an escape to foods supply that may be kept through isolation periods and the truth that most public spaces where consumers had to eat or buy fresh fish are no longer operating (Whitley Saumweber et.al, 2020). Fishing vessel is still remained at sea, including high seas fishing. Therefore, there should be constant monitoring not only covers national fishing area but should extend to high seas fishing region. During the pandemic period, Indonesian authority has intensified enforcement measures specifically in three areas within FMA 571 that consist of North Natuna Sea, Malacca Strait, and Sulawesi Sea by using Integrated Surveillance System (ISS) to detect illegal foreign fishing vessel in Indonesia FMAs (Erlangga Djumena, 2020).

### **2.1 Compliance measures**

The mandate to manage highly migratory fish stocks in high seas is subject to RFMOs rule and regulation. Consequently, as a full member, Indonesia harmonized national regulations to comply with management measures provided by RFMOs. For future sustainable development, Indonesia needs to build its capacity and improve its

compliance with the conservation and management measures (Rahmadi Sunoko et.al, 2014).

Since the paper is focused on law enforcement aspect, there are several highlighted conservation and management obligation for Indonesia of being a member State which are listed as follows :

**a. Data collection**

In pursuant to The 1982 UN Convention and the UN Fish Stocks Agreement, the purpose of collecting fisheries data is basically to support the conservation efforts and management of the resources. Moreover, the data might be used to identify the origin of a catch for the purposes of trade rules. For certain RFMO, collected fisheries data will also play a crucial role in determining the financial contributions. For example is the case with the Indian Ocean Tuna Commission. Article XIII of the Agreement for the Establishment of the Indian Ocean Tuna Commission, states, that "a scheme for contributions shall be adopted by the Commission, which shall involve an equal basic fee and a variable fee, which shall be based inter alia on the total catch and landing of species covered by the Agreement in the area, and the per capita income of each Member" (W.R. Edeson, 1999).

Indonesia fisheries use logbook system for tuna longline catches. Especially for southern bluefin tuna, the tuna Catch Documentation Scheme (CDS) was implemented since 2010. CDS are market-related measures that have been developed specifically to combat Illegal Unreported Unregulated fishing. In pursuant to Report of the Expert Consultation on Catch Documentation Schemes, FAO Fisheries and Aquaculture Report No. 1120, July 2015 an official definition is as follows:

"A system that tracks and traces fish from the point of capture through unloading and throughout the supply chain. A CDS records and certifies information that identifies the origin of fish caught and ensures they were harvested in a manner consistent with relevant national, regional and international conservation and management measures. The objective of the CDS is to combat IUU fishing by limiting access of IUU fish and fishery products to markets."

**b. Total allowable catch (TAC)**

TAC means a catch limit set for a particular fishery, generally for a year or a fishing season. For domestic management, Indonesia adopted the open access system. After reaching the total catch limit for the quota allocations, fishing activities will be prohibited. From an interview with the Ministry of Fisheries and Marine Affairs of Indonesia in Jakarta, it is known that the distribution of Indonesia's TAC determined in 2008 that was two associations whose members made the capture of southern bluefin tuna namely ATLI (Indonesian Long-line Tuna Association) and ASTUIN (Indonesian Tuna Association) with a ratio of 50:50 from the TAC of Indonesia. In 2010, a new association was formed, the Integrated Fishing Fisheries Association (ASPERTADU) whose members came from several tuna fishing companies that are members of ATLI Bali. ASPERTADU only gets quota allocations from associations whose catch is less than the specified quota. While catch in excess of national catch allocation, the non-

compliance status might be considered. The corrective action shall be taking against non compliance, including quota reduction.

### **c. Vessel monitoring and inspections**

Since 2003, Indonesia has implemented a Vessel Monitoring System (VMS) for fishing vessels operational system, as well as installing transmitters on fishing vessels of a certain size (> 30 GT). This system is implemented for vessels operating in the Indonesian Fisheries Management Area and in the high seas. Thus, it is possible to know the movement of fishing vessels and to identify their activities. In addition, VMS also ensures fishing vessels have complied with relevance regulations.

### **d. Observer program**

Regional Fisheries Management Organizations (RFMOs), institutional bodies that manage fisheries in the high seas, rely on accurate catch and effort data to establish the status of fish stocks and associated species. These data help them to reach the sustainable fisheries goal. The scientific observers will provide report that may indicate a need for changes in quotas, stricter regulation on types of fishing gear, enhanced enforcement of policies, or increased conservation efforts for species impacted by by-catch (Read D.Porter, 2010 ; Christopher Ewell et.al, 2020) and as a result observers can be at odds with the fisheries crew.

RFMOs with observer mandates vary in their coverage level requirements. Some mandate are subject to coverage percentage rates. Practically, IOTC mandates that contracting parties ensure that at least 5% of fishing vessels have observers onboard (IOTC “Resolution 11/04). In Indonesia, the tuna observer program started in 2005 under collaboration with the Research Center for Capture Fisheries, MMAF and CSIRO Marine and Atmospheric Research (Australia) in Benoa Port, Bali (Lilis Sadiyah et.al, 2011). Observers are onboard for vessels larger than 100 GT. The number of observers reached 38 with 82 trips, involving 33 companies with 33 tuna longline vessels in the period of 2005–2011. The limited number of onboard observers was due to a limited budget (Rahmadi Sunoko et.al, 2014).

### **e. Mitigation for by-catch and incidental catch species**

The term “by-catch”, according to Romanov (2002), Pauly (1984), Alverson and Hughes (1996), can be described as a fraction of the catch that consists of non-target species. Discards may appear while fishing, during vessel trip, or on return to port. Alverson et.al (1194) mentioned that by-catch is essential to identify (1) species retained and sold, (2) species or sizes and sexes of species discarded as a result of economic, legal, or personal considerations, and (3) non-targeted species retained and sold, plus all discards (Bram Setyadji et.al, 2013). Mindful that fishing for southern bluefin tuna can also cause incidental harm to other species such as sea turtles and sharks, mitigating incidental harm to ecologically related species caused by fishing for southern bluefin tuna is crucial. The Convention for the Conservation of Southern Bluefin Tuna in Article 2 referred to ecologically related species that is defined as “living marine species which are associated with southern bluefin tuna, including but not restricted to both predators and prey of southern bluefin tuna”. In order to minimize

marine pollution and the capture of non-target species, it is mandatory to release sea turtles, seabirds and other marine species caught incidentally. In doing so, the fishermen play an important role in implementation. (Rahmadi Sunoko et.al, 2014). By contrast, in pursuant to 2018, Annual Report to the Compliance Committee and the Extended Commission CCSBT, Indonesia has not yet complied with Recommendation to Mitigate the Impact on Ecologically Related Species of Fishing for Southern Bluefin Tuna.

## **2.2 Non-compliance is on the cards**

### **a. Modified transshipment pattern**

The Food and Agriculture Organization (FAO, 1996) defined transshipment as the “act of transferring the catch from one fishing vessel to either another fishing vessel or to a vessel used solely for the carriage of cargo”. Consider the benefit of transshipment to improve cost efficiency for fisheries, moreover, it is linked to a number of serious issues. S. Aanes described lack of transparent reporting of catches which makes catch documentation difficult, and forces managers to reconstruct catches indirectly. As an opens market access, transshipment also has a strong effect on fisheries and their outcomes in terms of sustainability (Fayakun Satria et.al, 2018).

Transshipment is widely recognised including unlicensed transshipment to foreign vessels, that has been a major issue in illegal fishing in Indonesia. Historically, Indonesian fishers did not incorporate transshipment into their operating procedures. Due to the proximity of their fishing grounds to port and the absence of freezing facilities on Indonesian vessels, catch was historically delivered directly to port by the fisher. Furthermore, as fishers now travel much longer distances transport of catch to port benefits from cold storage or rapid transit to ensure high quality product reaches the marketplace and attracts the most return on investment. The practice occurs either from a fishing vessel to a carrier vessel, between carrier vessels; or from a carrier vessel to a small boat (Fayakun Satria et.al, 2018).

In previous Indonesia path, both tuna purse seiner and tuna longline fishers includes the use of transshipment. However, the practice has not been followed with appropriate monitoring, recording and reporting of catches. Indonesia have been dealing with lack of consistent monitoring, makes it difficult to manage and evaluate fisheries, in particular the sustainability of fish stocks. Some issues such as the potential stock depletion issue, both decreased catch volume and decreased of fish size have emerged as international concerns (FAO, 2016 ; Fayakun Satria et.al, 2018).

Transshipment practice had been modified under provision of Ministerial Decree 12/2016, that was transshipment at sea is again allowed for longline vessels. However, there are several requirements inter alia: both carrier vessels and fishing vessels must have a common port registered in their fishing license; Regional Observer Program must be on board; the Vessel Monitoring System (VMS) must be activated; the vessels must report to a port administrator and the vessel operator must submit a written transshipment declaration prior to transshipping the catch. This compliance requirement is currently being objected by Tuna Association due to most Indonesian

fishing vessel are wooden, and hence, are not eligible for observers. Thus, compliance is likely made difficult if not impossible for fishers (Fayakun Satria et.al, 2018). Furthermore, as the pandemic situation nowadays, the banning of transshipment at sea can result in some unintended consequences. Julie Watson (2020) wrote as fishermen are returning home from sea to find a state all but shuttered and nowhere to sell their catch. A handful of tuna boats filled with tens of thousands of pounds of fish shall be floating off the coast as they scramble to find customers. Many wholesalers stopped buying as restaurants were ordered closed except for takeout. In the absence of ice, there can be no storage. In the absence of exporters and traders, there can be no selling. In the absence of fish workers, tasks such as loading and unloading of fish, transport of stock and ice and other jobs that are labor intensive and integral, can not be performed. The fishermen who had just returned from the sea did not know what to do with their stock. This situation may stimulate transshipment at sea gradually occurs.

Anecdotally, it has been reported that some fishers may now be unloading their catch on land. Here, it may temporarily reside for some days in refrigerated containers before being picked up again by a vessel and transferred elsewhere. Such perverse outcomes may be technically permissible, but are an unintended consequence of the new regulations. IUU fishing activities often cross national borders; fish caught illegally on the high seas may be transshipped in one nation's territory and sold in the markets of one or more other nations. Holly Doremus (2012) underlined the crucial of authorities in all the relevant nations have the technical means and the willingness to share data in real time.

**b. Over quota of target species and disregarded by-catch species**

By virtue of a member of RFMO, every State party will receive a Total Allowable Catch (TAC) to explore fish stocks within their EEZ or high seas. In doing so, it is necessary to manage development, imposition, and enforcement of a TAC and other measures such as gear limits, area closures, and seasonal restrictions. Furthermore, every State must be able to do tracking towards who own the quota shares including monitor individual catch.

Fisheries quota is set up for the purpose of sustainable fish stocks, hence, every coastal State must assure that they will not fishing excess than their national quota. For this matter, Indonesia needs to monitor the fishing effort in every FMA. By issuing Maritime Affairs and Fisheries Ministerial Decree No. 50/2017 regarding the potency estimation and utilization of fisheries resources, both government and concerned stakeholder will notice the exploration stage of fishing area. However, since 2017 this provision has not been updated yet while the utilization rate might have changed every year. According to this regulation, it can be seen that the range for fish stocks utilization is between fully-exploited and over-exploited, in particular FMA 573 where the area covers high seas also. Non existence of certain stocks estimation may lead to uncontrolled fishing. Indonesia might be unrecognized about some target fish stocks that have been over the quota while fishermen are clueless in harvesting the fish.

Researches show that the status of capture fisheries in Indonesia fishing area is mostly over-exploited. Meanwhile government's plan to increase fishing efforts will be taking the fishery sustainability at risk. In arranging the potency estimation, the Ministry of

Marine Affairs and Fisheries still refer to Maximum Sustainable Yield (MSY) concept. Moreover, that estimation has been dealing with uncertainty and may even perceive the difference between the current annual catch and the estimated MSY as an encouragement for further investment in capture fisheries (D.G.R Wiadnya et.al, 2006). Uniformly, incidental by-catch and associated discarding are difficult to estimate on the basis of logbook information. Various interest and how often fishing masters done with poor report, such practices are responsible for economic loss, juvenile mortality, ecological effects on key species that are relevant to the overall ecosystem structure and functioning (Bram Setyadji et.al, 2013). The high catch rate of longnose lancetfish and pelagic stingrays are likely appears in tuna longline fishery in Indonesia. The following fishing area described the relevant rate : Banda Sea (72.04%, regardless the main catch) (Nugraha & Wagiyo, 2006); in South of Java (57.73%, regardless the main catch) (Nugraha and Triharyuni, 2009), and West Sumatra (22.45%) (Nugraha & Nurdin, 2006). Since the species has no commercial value and, to avoid losing the hook, fishermen discard individuals at sea in such poor condition that survival probabilities are low. Of total discards recorded, 27.93% released alive, 24.75% injured, 4.37% dying, 42.78% dead, and 0.18% wrecked.

The picture that why a large number of by-catch caught by Indonesian fleets should be a concern. Regardless, the less economic value of by-catch species but it might ecologically important. As the pandemic situation have made fishing economy slowdown, it is not close the possibility for the fishers also provided evidence that the vessels took part in unlawful fishing practices, such as shark finning and transferring shark fins between vessels.

### **c. Invalid status of fishery data collection**

Under the 1995 United Nations Fish Stocks Agreement, that there is no problem about who should report data concerning fishing on the high seas as the flag State has particular reporting responsibilities imposed on it wherever it has been fishing for the stocks to which the Agreement applies. W.R. Edeson delivered the point on nationality of the catch (1999) that if the fish were to have any “nationality”, it would be that of the coastal State. The 1982 UNCLOS is silent on this matter. Coastal State holds sovereign rights over marine living resources until the fish are caught. Once caught within an EEZ, the nationality of fish may well be regarded as belonging to the coastal State for certain purposes under national law even though caught by another flag State. Nevertheless, for statistical purposes, the information supplied by the flag State is more acceptable.

Indonesia proceed with improvement on data collection process by validating logbook data with other data sources such as port clearance documents, fishing permit and VMS data. The commencing progress further could derived catch and effort data from logbook. There are three types of logbook template such as long-line/hand-line; purse-seine/pole and line and other gear. Ministry of Marine Affairs and Fisheries has released Regulation No.18 of 2010. It is required that logbook report has to be submitted to port authority prior to catch landing and mandatory to vessels above 5 GT. Issues on data entry and validity as well as the need for verification and validation prior to analysis is remained (Indonesia Report to IOTC, 2018). Thus, it has been revealed

the potential invalidity resulted from the discrepancy data between Indonesia national report and IOTC data.

Considering Indonesia territories is enormous has made the tuna catch monitoring in local market is exigent. Proctor (2003) argued that the current national system is designed for providing production statistics but not for scientific stock assessment. Some logbook data were formatted differently from the data collected by the port enumerator. In addition, limitations on the number of enumerators in the fishing port and times of observation throughout the day influenced the enumerator data quality (Rahmadi Sunoko et.al, 2014).

As Steven Adolf (Steven Adolf, 2019) asserted a total lack of any supervision over the vast waters of the many archipelagos but illegal fishing on the high seas, which no one was able to lay claim to, was practiced profusely too. First and foremost, tuna is a migratory fish. Neglecting borders at sea that the fleet owners tended not to see it as a problem that the tuna was caught illegally is related to constant pressure to catch tuna to supply the industry with enough raw material. Crews were usually paid on commission: no catch, no income.

The primary concern of the flag State duties is catch reporting requirements. The flag State must assure compliance for the purpose of conservation and management measures for highly migratory fish stocks established by RFMOs. Failing to maintain accurate records of catch and catch-related data, as required by the RFMO arrangement, or serious misreporting of catch, shall be considered in Article 21 the 1995 UNFSA as a serious violation. By doing so, flag State is required to enforce such measures where violations occur. For serious violations, the 1995 UNFSA specifically referred to action taken by State that the vessel does not engage in fishing operations on the high seas until such time as all outstanding sanctions imposed by the flag State in respect of the violation have been complied with. Highlighting the term “all outstanding sanctions” here, there is no a certain standard in practice which State must applied. Indistinguishable, the penalties for IUU fishing (Holly Doremus, 2012) which UNCLOS limits to fines rather than imprisonment for activities occurring beyond any nation’s territorial sea, may not provide adequate deterrence.

In respect of at-sea inspections, it is known that the coverage level of inspections is not yet comprehensive. According to Indonesia Annual Report to the Compliance Committee and the Extended Commission CCSBT 2018, At sea inspection by fisheries patrol vessels mainly conducted within the Indonesia territorial waters (12 nautical miles), but not exclusively to tuna fleets. It reflects how the coverage level of at-sea inspection has not yet covered high seas fishing trips thoroughly. This situation will be a lacunae for unlawful acts possibly occurred.

Improvement is necessary for better integrated data quality of stock assessment (Rahmadi Sunoko et.al, 2014). Regarding highly migratory species, data acquisition must be adjusted to science-based stock assessment. On the other hand, the operators of the VMS center are not sufficient in number. Monitoring, control and surveillance are under development including port inspections. In addition, the obligation to involve observers on board has not yet fully implemented in Indonesia fishing fleets. The issue of lack of observer on board to justify the catch report has been elaborated in Indonesia National Report to the Scientific Committee of the Indian Ocean Tuna Commission



2018, which it was stated that Indonesia has not yet complied with Resolution IOTC 2011/04. The progress being made is to enhance personal capacity of observer and increase coverage level of observer program, as well as strengthening collaboration with Indonesia Tuna Association. Similarly, it is written in Indonesia Annual Report<sup>[11]</sup> to<sup>[11]</sup> the Compliance Committee and the Extended Commission CCSBT 2018, while the scientific observer program has been in effort to comply with, the country still facing non-compliance issue such as timeframe data submission to CCSBT and there was no exchange of observers with other countries.

In the light of the corona virus crisis, fishers may also be reluctant to take observers and inspectors on board their vessels for fear of catching the virus from them. Although RFMOs have required that the 100% observer coverage must be complied, the social distancing seems to be main reason to excuse the observer existence. In respect of crews' concerns, it is an understandable move, but one that works against the advance of transparency in an industry that operates far beyond the horizon. From previous elaboration, it is clear the validity of Indonesian fisheries data is dubious. Invalid report may proceed to be assumed as unreported or misreported fishing. As provided by international legal framework, failing to maintain accurate records of catch and catch-related data, as required by the RFMO arrangement, or serious misreporting of catch, shall be considered in Article 21(11)(b) the 1995 UNFSA as a serious violation. This should be a concern for Indonesia as fishing for highly migratory species shall be assumed as catching international fish.

### **3. CONCLUSION**

In the light of Indonesia has decided to sustain fisheries productivity during pandemic situation, it is necessary for the country to take extra ordinary concern to do fisheries enforcement. The enforcement agents are more focusing on coastal fisheries and/or marine region within Indonesia fishing management area. In addition, the national law works massively against illegal foreign fishing vessel. In the meantime, fishing activities in high seas that have been also part of Indonesia fishing interest are likely out of tracker detection. Integrated Surveillance System operated by the authority has helped to catch illegal fishing vessel. However, as coastal fishing might face problem, off-shore fisheries are likely going strong due to their facility to catch more far away and keep the caught fish in cold storage. From this, there are some nefarious activities at sea that possible to happen, especially regarding over quota provided by RFMOs, modified transshipment, and invalid fisheries data which may lead to unreported fishing crime. Further research might be considered regarding the regulations and legal framework of fishing business that may apply during pandemic.

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