

Indonesia's Decision to Share Data of Vessel Monitoring System with Global Fishing Watch

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Abstract: This article examines Indonesia's decision to share data of Vessel Monitoring System (VMS) with Global Fishing Watch (GFW). What are the considerations and what does Indonesia aim to achieve by this decision? Based on a library research as a method and utilizing global governance, collective legitimization, and rationalist international regimes as an approach for analysis, arguments in the paper are proposed as follows. First, Indonesia's interest in sharing VMS data with GFW has been driven by a desire to increase Jakarta's legitimacy on establishing fisheries transparency regime at the global level. Second, with a global legitimacy in hand, the Indonesian government could have a strong base to collectively pressing the global community agree on identifying illegal, unreported and unregulated fishing (IUUF) activities as a form of transnational organized crime (TOC). This is important for Indonesia as the continued presence of IUUF has inhibited the Indonesian government to optimally gain benefits from potential marine resources on majority of Indonesian territorial waters.

1 INTRODUCTION

As an archipelagic country with an area of about 5.8 million km² (about 75 percent of the total area), Indonesia has a large potential of marine resources, ranging from fisheries, marine industry, marine services, transportation, to marine tourism. It was recorded in 2016, for example, Indonesia's capture fisheries production reached 6,351,480,00 tons consisting of fish, hard-skinned animals, soft animals, other animals, and aquatic plants (Ditjen Perikanan Tangkap, 2017). However, the potential so far has not been utilized to the maximum so as not to contribute significantly to the national development yet. Instead of getting profits, Indonesia has been harmed due to various illegal fishing practices from both local and foreign fishermen (Solihin, 2010). In addition, the close geographical position of Indonesian waters with the international ones has made it easier for the entry of foreign fishermen into Indonesian waters to illegally fish. Thus, Indonesian waters are vulnerable to illegal, unreported and unregulated fishing (IUUF) activities. Based on data from the Indonesian Ministry of Marine and Fishery Affairs, the state losses due to illegal fishing amount to 300 trillion

rupiah per year, equal to 25% of the total fishery potential of Indonesia (Detik Finance, 2015).

IUUF activities occurring in Indonesian waters are not just stand-alone, but they have been suspected of being part of a systematic and sustainable cross-border network (Wahjono, 2010). Furthermore, these illegal activities have taken place in many parts of Indonesian waters. In the western part, they operate in Northern Borneo waters of South China Sea area, the waters of Aceh, Straits of Malacca, Pandan Waters and Sibolga Bay in North Sumatra, the waters of Tambelan Island between Riau and West Kalimantan in Strait of Karimata, Natuna Sea in South China Sea waters, the waters of Gosong Niger Island in West Kalimantan. While in the eastern area they usually operate in the waters of Papua (Sorong, Bintuni Bay, Fakfak, Kaimana, Merauke, Arafuru waters), seas of Maluku and Halmahera, Tual waters, Sulawesi sea, the Pacific Ocean, Indonesian-Australian waters, and the waters of East Kalimantan (Muhamad, 2012).

Indonesia has taken various efforts to overcoming IUUF problems. Since 2003 the Ministry of Marine and Fishery Affairs has supervised the coordinates of fishing vessels in Indonesian waters using a technology device called Vessel Monitoring System (VMS). It is a form of

surveillance system in the field of fishing and its transporting using satellite fishing vessel monitoring equipment and transmitter. This system is placed on a fishing vessel to facilitate supervision of its activities based on its position monitored at the Fishery Ship Monitoring Center in Jakarta. In addition, VMS also serves as an analysis material to obtain information on the speed and patterns of movement of the vessels and its previous near real time data recording (Direktorat Sarana dan Prasarana Pegawai P2SDKP, 2008).

Under the leadership of President Joko Widodo, Indonesia has been very loud of calling for the eradication of IUUF globally. It has issued a number of firm legal measures, including the drowning of illegal fishing vessels, the moratorium on ex-foreign fishing vessels, the prohibition of transshipment (activities involving refrigerated cargo ships collecting catches from several fishing vessels in the ocean while waiting for transfers to ports), and restrictions on the use of environmentally destructive fishing gears (Kumparan, 2017). The latest move has been the decision to share VMS data with an international organization called Global Fishing Watch (GFW). In 2017 Jakarta officially started to distribute VMS data to GFW, the first country in the world to share such data to the public. This is a new breakthrough, encouraging global law enforcement policies to free Indonesian waters from illegal fishing practices, ensuring better fishery management in the high seas, and supporting transparent marine and fisheries management, by using real time data provided by GFW (Kementerian Kelautan dan Perikanan, 2014). With this decision, public can see fishing activities in Indonesia freely anywhere and anytime, as well as information on fishing vessels, such as fishing gear, flags, ship weight, and length and width of fishing vessels via www.globalfishingwatch.org (KKP News, 2015). What are the considerations and what does Indonesia aim to achieve with this policy? This article explores and seeks to finding the answers for such questions.

GFW is an international organization established by Google, Sky Truth and Oceana. It provides a visualization tool for the global vessels movement activity based on the Automatic Identification System (AIS) that allows the public to visualize worldwide near-real-time fishing activities for free. GFW was launched globally on September 15, 2016 on the sidelines of the 2016 Our Ocean Conference (OOC) forum in Washington DC, USA. Initially, it took the form of a consortium before being officially recognized as an Independent NGO in April 2017 (Global Fishing Watch, 2017). GFW analyzes AIS

data collected from satellite, terrestrial, and research vessels identified as commercial fishing vessels, to demonstrate the movement of fishing vessels over time. GFW implements a fishing catch detection algorithm to classify fishing or non-fishing activities (transit) based on ship movements such as speed, direction and turning speed (Greeners, 2016).

2 METHODS AND APPROACH FOR ANALYSIS

This article was based on a library research. Data were gathered from books, journal, government reports and laws, official reports from relevant international organizations, and other related information from mainstream media. In addition, previous studies on the issue were also consulted. The data gathered then further analyzed using global governance, collective legitimization, and rationalist international regimes as an approach for analysis.

There are two broad aims for any government to opening data to the public and international organizations. One is for improving the quality of government's services and role, by which governments can expand public participation in politics (Huijboom & Van den Broek, 2011; Schrier, 2014; Izdebski, 2015). Another aim is for encouraging and enhancing more productive collaborations with other countries, international organizations, and multinational corporations. Since the terrorist attacks of September 11, 2001, sharing information and data has become a central part of collective effort by many countries to detect terrorist threats and plots (Jackson, 2014).

Sharing data at international level is considered as means to build trust between states involved and it will contribute to a long-term commitment and strong international cooperation (Thu & Wehn, 2016). Seen from this perspective, therefore, sharing data at global level can be considered as part of global governance activity, defined by Karns, Mingst and Stiles (2015) as collaborative efforts undertaken by states and other legitimate international agencies to dealing with various international issues. These efforts come in the forms of international laws or regulations, structures such as formal international intergovernmental organizations as well as improvisational arrangements that provide decision-making processes, information gathering and analytical functions, dispute resolution procedures, and in operational capabilities of technical managing and

development assistance programs. Moreover, instruments of global governance allow other non-state actors to taking parts in solving global issues. Parties involved in these collaborative instruments hold an international collective legitimacy.

Collective legitimacy is an act whereby legitimacy is associated with national policies and other objects by multilateral organizations (Brewer, 1972). It is used by countries seeking to gain national and international credibility. International organizations have been considered and used as agents to legitimize national status, policy and action, while non-governmental organizations and transnational social movements are regarded as potential actors to fill the gap of global governance legitimacy. A key aspect of legitimacy in the international system is membership in the international community, whose multilateral interaction system and its reciprocity help validate its members, institutions and regulations. Inter-governmental consultations with NGOs can enhance the legitimacy of international decision-making (Karns, Mingst, Stiles, 2015).

It is within the context elaborated above that states tend to act in a rational way. When the states cannot maximize its interests because of low international information flow and high transaction costs in international politics, the state will be seeking to create a regime to improve the flow of information and reduce transaction costs (Mitchell, 1998). An established international regime can increase the flow of international information in various ways; create new information, act as a repository for existing information, or create standards that increase the comparability of various information sources. The regime can also reduce transaction costs by providing forums to discuss issues, creating standard rules and procedures, and establishing administrative structures (Barkin, 2006). Collaboration under certain agreed regimes not only guarantees trust among states, but also boosting international legitimacy for states involved, enabling them to at least have a moral legitimacy when calling international community to take certain acts. Indonesia's decision to share data of VMS with the GFW is seen and understood within this framework of analysis.

3 RESULTS AND DISCUSSION

3.1 Global Concerted Effort via GFW

As indicated previously, solving problems in the field of fisheries, especially the eradication of IUUF, has been one of Indonesia's priorities under President Joko Widodo. Jakarta is highly aware that the IUUF predicament is global in nature and therefore requires a global concerted effort to get rid of it. Collaborating with the GFW is one form of reaching global concerted efforts. Within the context of global governance perspective, the GFW is considered as a form of governance that could assist in combating illegal fishing. Indonesia and GFW work together to identify, understand, and address major fishery-related issues. With this partnership, Indonesia became the first country in the world to distribute VMS data for all Indonesian flagged fishing vessels in the publicly available GFW data platform. With the decision then all fishing vessels that install VMS transmitters catching fish in Indonesian waters can be viewed through the GFW website <http://globalfishingwatch.org/map/>. By 2017, there were 367 illegal vessels successfully seized by Indonesian authorities, many of which by the help of information provided by GFW (Tempo.co, 2017).

Prior to the collaboration with Indonesia, GFW used AIS data to monitor the activities of the world's fishing vessels. By using machine learning and cloud computing, GFW analyzes the ship's movement patterns to identify and display commercial fishing activities. It also uses algorithms developed for AIS technology, to process and analyze data of Indonesia's VMS. Movement analysis of vessels is displayed through the GFW public mapping platform, which then can be used for many purposes such as tracking ships, monitoring activities in Marine Protected Areas (MPAs), or transshipment activities. More importantly, GFW can disclose fishing activities closely related to IUUF and human rights abuses. For example, in 2016, with the aid of GFW, the Associated Press released a series of articles on the prevalence of slavery in the Southeast Asian fisheries industries. This reportage helped to uncover the slavery practice in Benjin, Aru Islands of Maluku, where nearly 2,000 slaves were freed (Htusan & Mason, 2015).

Furthermore, Indonesia's VMS data sharing has enabled GFW to produce further rich data for research purposes, of which one analysis was taken to assess the economic impact of Indonesia's efforts in combating IUUF. It found that Indonesia's new

fishery policy has reduced total fishing effort by at least 25% and potentially resulted in a 14% increase in catch, and a 12% increase in earnings. Equally, it has led to a 30% reduction in the number of fishing vessels operating in Indonesia. In 2013, Indonesia was ranked 15th in the world for countries whose region of exclusive economic zone were most illegally entered by foreign vessels. The ranked were down to 85th by 2016. The analysis of AIS data from GFW also shows a decrease of 90% of ship operating hours in Indonesia, most of which were from China, Thailand, Taiwan and South Korea (Cabral, et al., 2018).

Moreover, GFW is also capable of resolving disputes related to IUUF. It has helped Indonesian authorities able to verify the movement of the F/V STS-50, the famous Patagonian and Antarctic toothfish fishing hunters that has operated under a number of different names and flags, blacklisted in 2016 by the Commission for the Conservation of Antarctic Living Marine Resources (CCAMLR) and INTERPOL Purple Notice for IUUF. Using the analysis of the publicly broadcasted AIS signal from the vessel, GFW tracked its movement beginning in December 2017 in Southeast Asia, traveling back and forth across the Indian Ocean, stopping in Madagascar and Mozambique, until it was caught in the waters of Indonesia in April 2018 (Long, 2018).

Facilitative role is one function usually played by international organization (Abbott & Snidal, 1998), and the GFW has also played this function by partnering with various parties. It has signed an agreement with the National Oceanic and Atmospheric Administration (NOAA) to share data that helps identify the location of ships in Indonesian waters. This agreement has enabled data matching of VMS usage in Indonesia for the NOAA satellite based on the Visible Infrared Imaging Radiometer Suite (VIIRS), which detects the ship's lights at night (Undercurrent News, 2018). While most of the ships that appear in VIIRS are not vessels required by Indonesia to carry VMS (ships exceeding 30 GT), some may be foreign ships that do not carry VMS as it illegally hunts in Indonesian waters. Initial cross-matching use found that 80% of VIIRS detection is not registered in VMS Indonesia, so this indicates many possibilities among which are ships that use bright lights to catch fish. Combining the two data sources will provide a more complete picture of fishing activities in Indonesia. Vessels that catch fish in Indonesian waters illegally using bright lights can be detected at night through GFW. In addition, GFW will have access to the VIIRS vessels detection data, so that GFW may expand the number of report

records of fishing vessels in the database for public analysis and monitoring purposes.

From the perspective of international collective legitimacy --proposing that states seek collective legitimacy for earning national and international credibility-- Indonesia's collaboration with GFW can be interpreted as part of Jakarta's strategy of achieving international credibility in its call for eradicating IUUF. Jakarta uses GFW as an agent where GFW functions by facilitating the provision of a website platform and opening of AIS and VMS Indonesia data. With its own platform, GFW can also make a country deploy and create transparency of global fishing activities. Therefore, GFW is being used by Indonesia with a view to creating transparency in global fishery activities and enhancing Indonesia's legitimacy in the international eyes. As an important source in the pursuit of power, the collaboration is one efficient option for Indonesia to gain international legitimacy. Indeed, one of the keys to legitimacy is through transparency and in this regard, Indonesia has a mission in line with GFW, creating transparency of global fishing activities. By practicing transparency in fishery policies globally, more equipment and eyes will be monitored in the oceans, which make the less space for illegal fishing vessels to hide. For example, based on data from GFW, China, South Korea, and Taiwan are the flagship state of vessels that most often catch fish in the ZEE areas of foreign countries. One source reveals that vessels with flags from these countries have caught fish in more than 50 foreign ZEEs and have been involved in several IUUF incidents on foreign ZEE (Cabral, et al., 2018).

3.2 Fisheries Transparency Regime

In managing marine fisheries resources in a transparent way, the Indonesian Minister of Marine and Fisheries Affairs, Susi Pudjiastuti, has called the international community join to achieve this goal. The minister openly invites the international community to publish information that the public needs to know to get rid of the main obstacles of sustainable fisheries resource management. As a result, Indonesia has been awarded as a leading country that encourages transparency in sustainable fisheries management, through the implementation of a list of license holders, ship permits, catch data, export figures and imports of fishery products, tariff calculations, to government regulations. In addition, Minister Pudjiastuti has also been recognized as a champion in the eradication of the IUUF.

Indonesia's desire to establish a fishery transparency standard is in line with Barkin's (2006) rationalist approach of the international regime, stipulating that when states cannot maximize interests because of the low international information flow, they will seek to create a regime to improve the flow of information, which Indonesia has done by collaborating with GFW. The flow of information here is related to the lack of transparency in the current world's fishery industry. In international relations, transparency contributes to the regime's effectiveness and reduces the risk of conflict (Choi & Jame, 2006). GFW provides the necessary device that is a maritime ship portal and data tracking worldwide from AIS and VMS, which are technologies that must be installed and used by fishing vessels whose function is to signal the ship's position while in the ocean. What GFW has done is bringing these technologies to the public so that the public can monitor directly what is happening in the ocean. By sharing VMS data with GFW, Indonesia has added VMS data covering nearly 5,000 fishing vessels. Therefore, the inclusion of Indonesian VMS data to GFW databases may reveal fishing in vast sea areas previously unseen.

In a rationalist approach to the international regime, a regime can enhance international information flows in various ways, such as creating new information, acting as a warehouse for existing information, or creating standards that enhance the comparability of various information sources. In this case, as an agent GFW able to perform all the necessary elements as a regime. Therefore, Indonesia should be suspected of using GFW as an agent to create transparency standards in the fishing industry. GFW able to act as a warehouse that collects all available information, such as AIS data, VMS and VIIRS-based satellite data from NOAA. GFW then process the data to create new information related to the world of international fisheries. Furthermore, GFW is also developing standards that enhance information resources. It seeks to increase transparency on the movements of fishing vessels in the world, which for this it receives data of fishing vessels from both companies and countries. AIS GFW data is obtained from a partnership with two satellite data companies, Orbcomm and Spire (ORBCOMM, 2018). While VMS data is received from Indonesia, Peru and Costa Rica (Global Fishing Watch, 2018).

The biggest obstacle to successful monitoring is the reluctance of countries to surrender authority to international regime representatives. This is still a constraint for GFW and Indonesia. Currently only

three countries, namely Indonesia, Peru, and Costa Rica are willing to provide VMS data open to the public. For many countries, the difficulties are due to domestic regulations that still limit the opening of VMS data to the public and can only be accessed for certain purposes such as for the use of fisheries management, law enforcement, knowledge, development, conservation and management monitoring fisheries with appropriate legal provisions. For example, the US requires VMS data to be opened and collected only for investigation and law enforcement. The obligations are governed by the provisions of the US Seven Exclusion United States Information Disclosure Act (Ambari, 2017).

The GFW partnership with Indonesia, Peru and Costa Rica sets new standards for transparency at sea. By distributing their VMS data through GFW, Indonesia, Peru and Costa Rica have committed to a level of transparency that fosters trust and keeps them accountable for monitoring their vessels and foreign ships in their waters. Although it is only Peru and Costa Rica that follow in the footsteps of Indonesia, in the future this certainly will attract international attention. With Indonesia's success in combating the IUUF, which has received much praise from the international community, there will not be much difficulty for Indonesia to encourage other countries to commit to the transparency of fisheries management. These analysis suggests that with cooperation through GFW, Indonesia seeks to create an international fisheries transparency standard. Jakarta has taken bold steps to improve transparency in the country's fisheries industry. Therefore, Indonesia urges other countries to participate in the transparency of their fisheries management by encouraging all countries to join in sharing their VMS data with GFW and initiating a new era of transparency to end IUUF.

3.3 IUUF Activities as a Form of TOC

Since 2015, Minister Pudjiastuti has proposed and in various international forums encouraged other countries to agree on categorizing IUUF as one form of TOC. At the World Ocean Summit in Bali in February 2017, Minister Pudjiastuti called the United Nations (UN) and the European Commission to classify the IUUF as a TOC. The request was re-raised at the UN 2017 Ocean Conference, calling for a tough action to eradicate IUUF, identifying it as a TOC activity. The argument is that by recognizing IUUF as a TOC, the government would able to have better access to the tools necessary to implement cooperation that lead to the eradication of IUUF

(Salim, 2015). Like terrorism, illegal fishing can also be solved jointly across countries if categorized as TOC. According to Minister Pudjiastuti, it is time for the world to acknowledge that the practice of IUUF is not just a fish theft but often used as a vehicle for other extraordinary crimes such as smuggling of narcotics and animals, human trafficking, slavery, as well as violation of national borders and sovereignty. For example, nearly 80% of large-scale drug dispersal in Indonesia involves the use of fishing vessels and large cargo vessels for human trafficking and export of endangered species. With a shared commitment globally, it will be easier for Indonesia to eliminate such practices from national waters.

The IUUF should be recognized as a TOC because of its scale, complexity and diversity. It is a profit-driven transnational crime, associated with weak, incompetent and corrupt governance. Thus, its conceptualization as a TOC makes efforts to establish political priorities and identifies the actions and resources necessary to solve the IUUF problem more easily (Osterblom, Constable and Fukumi, 2011). The IUUF involves transnational organizations from various countries, using flags, crewmembers, and ships from various countries too. That means that cracking down on the IUUF will require enforcement from international organizations such as the UN. Furthermore, it would allow countries to get help from organizations such as Interpol and the UN Office on Drugs and Crime (UNODC) to eradicate IUUF (Parameswaran, 2017). If the IUUF is recognized as TOC, then it will provide a binding mechanism, something that is not currently owned by the international community. The binding mechanism will not only contain unilateral responses but also help create the legal regime necessary to combat IUUF (Rustam & Sangadji, 2015).

4 CONCLUSION

The Indonesian government prioritizes the eradication of IUUF because it has lost trillions of rupiah due to the problem. In dealing with IUUF problems, Indonesia has opted to collaborating with GFW by distributing VMS data. This can provide much needed insight into the world of commercial fisheries. The initiative of GFW by making information freely available to the public is a game-changer. GFW's efforts can empower researchers, governments, and communities to dig deeper into fisheries data and find answers to questions such as

which seas are most vulnerable to illegal fishing or ships from any country that breaks the rules. Indonesia's strategy through GFW is seeking to create global fisheries transparency regime by using GFW as an agent to legitimize Indonesia's national fishery policies. With transparency, vessels of good behavior are valued, monitoring is cheaper and more effective, and bad actors are clearer and can be punished appropriately. Through greater transparency, all parties can work together to find out illegal operators that are easy to catch. The benefits that Indonesia wants to get after working with GFW is that the IUUF to be included in the TOC category, by which would make it easier for all countries to coordinate in handling illegal fishing. In addition, it would allow countries to get help from organizations like Interpol and UNODC to eradicate IUUF.

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