Prohibition of the Use of Trawl Fishing Equipment as an Effort to Realize the 17 Principles of Sustainable Development Goals in the Capture Fisheries Sector

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Abstract. The purpose of this study is to explain the implications of enforcing regulations prohibiting the use of prohibited fishing gear in efforts to maintain the sustainability of fish availability in Indonesia, as well as whether the policy of prohibiting the use of trawl or cantrang fishing gear is consistent with the 17 principles of the Sustainable Development Goals. It will use normative legal research methods in conjunction with qualitative descriptive-analytical research criteria. The study's findings demonstrate the consequences of enforcing restrictions against the use of prohibited fishing gear, as outlined in the Ministry of Marine Affairs and Fisheries Regulation No. 2 of 2015, in order to ensure the sustainability of fish supply. The Ministry of Fisheries Cities/Regions throughout Indonesia have socialized the Regulation of Minister of Marine Affairs and Fisheries No. 2 of 2015 to fishermen and the wider community, as well as policy alignment on the prohibition of the use of cantrang fishing gear with 17 principles of sustainable development goals include realizing several policies as a follow-up to the ratification of the convention on the Code of Perform for accountable Fisheries.

Keywords: Prohibition, cantrang, Use of Fishing Equipment, Sustainable Development Goals.

1 Introduction

A large part of the country with coastlines and seas is a long-term asset in sustainable development with a wealth of fish resources. In carrying out fishing activities, fishermen in Indonesia always innovate in making and using fishing gear, especially aiming to get large amounts of fish in a relatively fast and inexpensive time. No. 4 Article 1 number (1) of Law No. 45 of 2009 concerning Fisheries states that fishermen are people whose livelihoods are fishing. The increasing public demand for fish, both at home and abroad, and the availability of fish in Indonesia's marine areas, makes fishermen try to catch fish easily and produce large fish catches. They do not consider the damage to the ecosystem's environment or the sustainability of the availability of fish in the sea.

One of the fishing gears that can potentially damage marine biota and fish ecosystems still used by fishermen today is trawl (*cantrang*). Cantrang is a fishing tool that resembles a trawler or tiger trawl, the difference is that cantrang uses a net but is smaller in size. One cantrang consists of a bag, net mouth, towing rope, buoy, and ballast. In addition, the cantrang is also equipped with two long ropes. This rope can reach 6,000 meters in a 30-gross ton (GT) vessel. With the length of the rope, the coverage of the sweep of the rope can reach 292 hectares [1].

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The nets' pulling causes the bottom of the ocean to churn, which has a tremendous impact on the underwater environment. According to the Ministry of Maritime Affairs and Fisheries, the catch that has economic value and is fit for eating is 46-51% when utilizing cantrang, while the remaining 49-54% is bycatch, which is dominated by petek fish and is only used to manufacture feed flour fish. In essence, the government has been concerned about regulating fishing gear and prohibiting the utilization of fishing equipment that is damaging to marine ecosystems. Other countries, including the European Union, the United States (US), New Zealand, and Australia, have generally prohibited Basic Trawling [2].

Even though the use of cantrang has been banned by the government, small fishermen in several areas have held demonstrations so that the government may allow the use of cantrang in some fishing areas. Traditional cantrang that has not been modified is classified as environmentally friendly in catching fish at speed to restore fish populations, the effectiveness of traditional cantrang is still low [3].

According to the Indonesian state's legislation, the employing of this fishing gear is prohibited in Indonesia since it is included in fishing gear that is not very environmentally friendly because it has a dreadful impact. This fishing gear works by pulling it behind the ship (while the ship is moving) so that the cantrang or trawling can trace to the bottom of the seas and catch fish, shrimp, and other demersal organisms.

Every creature needs time to reproduce, this is the main problem with trawls. Trawls catch all fish (adults and small) because of the very small size of the net holes. As a result of the continuous use of this trawl fishing gear, it will have a major impact on environmental damage, and destroy marine ecosystems, such as damage to coral reefs which are a habitat for fish to gather and grow more.

The Ministry of Maritime Affairs and Fisheries took one step toward restoring the carrying capacity of the environment by issuing Regulation of the Minister of Marine Affairs and Fisheries of the Republic of Indonesia No. 2 of 2015 Concerning the Prohibition of the Use of Fishing Trawls and Seine Nets throughout the Country. Therefore, fish resources do not become extinct; instead, they are replenished and reduced until the fish can be employed best.

The Minister of Maritime Affairs and Fisheries Regulation No. 2 of 2015 concerning the prohibition of the use of trawls has experienced pros and cons for most fishermen in Indonesia. Some pro fishermen think that the regulation will positively impact the sustainability of marine ecosystems in the future. In contrast, fishermen who are against the regulation feel that they will lose their source of livelihood and will impact their financial results.

This prohibition is an attempt to achieve the 17 Sustainable Development Goals (SDGs). To attain the national aim of marine ecosystems by 2030, ten targets have been established, which will be measured using 15 indicators. Policies, programs, and actions to be implemented by the government and nonprofit organizations outline the efforts made to attain these aims.

Based on the background of the problems above, the formulation of the problem is:

1. What are the implications of the implementation of regulations regarding the use of fishing gear that are prohibited based on the Regulation of the Minister of Marine Affairs and Fisheries No. 2 of 2015 on efforts to maintain the sustainability of fish availability in Indonesia?
2. Is the policy of prohibiting the use of cantrang fishing gear in line with the 17 principles of sustainable development?

2 Research Methods

This study approach is normative juridical, utilizing secondary data derived from laws and regulations, public works, and diverse literature that supports this research. This study approach is normative juridical, utilizing secondary data derived from laws and regulations, public works, and diverse literature that supports this research [4]. The explanation for utilizing qualitative evaluation is that the data obtained is in the manner of questioning phrases, the data acquired is broad knowledge, and numbers cannot assess the association among elements.

3 Results and Discussion

3.1 Implications of Implementing Regulations Regarding the Use of Prohibited Fishing Equipment Based on the Regulation of the Minister of Marine Affairs and Fisheries No. 2 of 2015 on Efforts to Maintain the Sustainability of Fish Availability in Indonesia

Indonesia, as a country with significant potential in the fisheries sector, deserves considerable consideration from the government, particularly the Ministry of Maritime Affairs and Fisheries, which is primarily responsible for marine and fisheries issues. To implement the Minister of Marine Affairs and Fisheries Regulation (PERMEN KP) No. 2 of 2015 concerning the Prohibition of Trawl Use in the Republic of Indonesia, the Ministry of Maritime Affairs and Fisheries of the Republic of Indonesia has carried out socialization of PERMEN No. 2 of 2015.

Indonesia as a country that has potential in the fishery sector certainly needs to get serious attention from the Government, especially the Ministry of Maritime Affairs and Fisheries which handles specifically in the field of Marine and Fisheries in accordance with its main duties and functions. In an effort to implement PERMEN KP No. 2 of 2015 concerning the Prohibition of the The Ministry of Maritime Affairs and Fisheries of the Republic of Indonesia has carried out socialization of PERMEN No. 2 of 2015. Indonesia, as a country with potential in the fishing sector, deserves urgent attention from the government, particularly the Ministry of Maritime Affairs and Fisheries, which is expressly responsible for marine and fisheries issues in accordance with its core tasks and functions. The Ministry of Maritime Affairs and Fisheries of the Republic of Indonesia has carried out socialization of PERMEN No. 2 of 2015 concerning the Prohibition of the Use of Trawls in the Republic of Indonesia in order to implement PERMEN No. 2 of 2015 [5].

The Ministry of Maritime Affairs and Fisheries of the Republic of Indonesia also conducts socialization through fishery teachers appointed to each City/Regency. The Head of Fish Landing Base (Pelabuhan Pendaratan Ikan/PPI) of the Ministry of Fisheries carried out this specifically in Cities/Regions in All Territories of Indonesia. The first step is to call fishermen and the general public to the PPI port by issuing a warning and an appeal about the prohibition on the use of trawl fishing gear. They were also given a guidebook that forbade the use of trawl fishing gear. The purpose is for people to understand about the restrictions and their roles as fishermen in catching fish [5]. By performing interacting with fishermen, it is hoped that fishermen can comprehend the dangers of using forbidden trawls and the penalties that will be imposed if there is a violation. There was indeed socialization related to the regulation, but only some of the fishermen attended because the fishermen did not really want

to know about what the authorities were doing, preferring to execute their own personal activities, if it was about the enactment of the regulation, it was felt by all fishermen. already knew about it. Following the socialization carried out by the Republic of Indonesia's Ministry of Maritime Affairs and Fisheries and the PPI of the Ministry of Fisheries in cities/regions around Indonesia, there was a change in the trawling fishing gear utilized in harvesting fish. The community no longer dares to use prohibited trawls, and the fishermen are scared of the sanctions themselves. Fishermen are also becoming concerned about the preservation of the marine ecology [5].

The Regulation of the Minister of Maritime Affairs and Fisheries of the Republic of Indonesia No. 2 of 2015 Concerning the Prohibition of the Use of Trawls is a derivative rule or clarifying rule of Law No. 45 of 2009 Concerning Amendments to Law No. 31 of 2004 Concerning Fisheries, that provides in article 9 that:

> *"Everyone is prohibited from owning, controlling, carrying, and/or using fishing gear and/or fishing aids that interfere with and damage the sustainability of fish resources on fishing vessels in the fishery management area of the Republic of Indonesia."*

This is confirmed in the Regulation of the Minister of Maritime Affairs and Fisheries No. 2 of 2015 concerning the Prohibition of the Use of Fishing Trawls and Seine Nets which is explicitly stated in article 2 which reads:

> *"Everyone is prohibited from using trawls and seine nets in the entire Fisheries Management Area of the Republic of Indonesia."*

Hunts have been studied and found to endanger the sustainability of national and regional fish stocks as well as harm marine ecosystems. Fishermen's behavior has changed since the implementation of PERMEN KP No. 2 of 2015. This may be observed in how fishermen have abandoned the practice of utilizing trawling to gather fish in the past, and instead prefer to use nets that are more environmentally friendly, such as nets. Giil Net for Fish Capture.

With the enactment of PERMEN KP No. 2 of 2015 concerning the Prohibition of the Use of Trawls in Cities/Regencies throughout the Territory of Indonesia, the Republic of Indonesia is expected to be able to improve the welfare of the community and maintain the sustainability of marine ecosystems, both their habitats and the breeding process of fish that live in them, this will be very beneficial for the needs of marine product stocks for future generations. Public policy is a collection of interconnected decisions made by government agencies in areas linked to government tasks [6]. The public policy cycle is divided into three stages: policy formulation, policy implementation, and monitoring and assessing (results) of policy implementation [7]. As a result, the efficacy of a government initiative is heavily influenced by the policy process, which includes structure, execution, and review. The three major actions of the policy process are in a continual cyclical connection until a public problem or a specific goal is met..

It is hoped that the Minister of Maritime Affairs and Fisheries of the Republic of Indonesia's Regulation will improve the welfare of fishermen by raising public knowledge about the dangers of using trawls. There are areas where fish concentrate and reproduce in higher numbers when fishing or restoring the sustainability of marine ecosystems by maintaining coral reefs or the like.

3.2 Alignment of the Policy on the Prohibition of the Use of Cantrang Fishing Equipment with the 17 Principles of Sustainable Development Goals

At the end of the 20th century and entering the 3rd millennium, two important international issues have been proclaimed: the maintenance of the earth's environment and the guarantee of food supply (Eart environmental conservation and food security).

Even now, the globe is in the grip of a food and energy crisis. The United Nations World Agency, FAO, issued provisions in 1995 as an international instrument in achieving Sustainable Fisheries Development, known as the Code of Conduct for Responsible Fisheries, which was unanimously adopted on October 31, 1995, at the FAO conference. Under UU No. 31 of 2004, fisheries management, including capture fisheries activities, must be carried out in accordance with the principles of benefit, justice, partnership, equity, integration, openness, efficiency, and sustainable sustainability.

Saving marine biological resources does not mean that they do not need to be used at all. On the other hand, marine and fishery resources need to be used wisely for the benefit of the entire community.

In the process of utilizing fish resources, in addition to ensuring competitive products, it is also necessary to meet environmentally sound products, so that the fishing technology used in the production process will be faced with several requirements, namely [8]:

1. Does not endanger the sustainability of the target species, thus the fishing gear must have high selectivity, both in terms of size and species
2. Does not result in the capture or threat of protected and safe aquatic animal or plant life for biodiversity
3. Does not disturb the ecological balance, including low bycatch and discards generated
4. Does not destroy habitat
5. Does not endanger the safety of fishing actors and consumers
6. Beneficial and acceptable to society

The problem of capture fisheries, whether in the form of social problems or environmental damage and the declining stock of fish resources, has arisen for a long time since humans have used the sea or public waters as a source to obtain food. But at that time the weight of the problems that arose was not as heavy as what is being faced at this time, where both the social complications that arise as a result of massive competition for fish that are the goal of catching, or the environmental damage and the resulting extinction of several fish species have shown very concerning indicators for the survival of future generations [9]. Use of explosives, toxic chemicals, loss of fishing gear during operations (ghost fishing), catching of various types of marine animals such as dolphins, whales, seabirds and turtles by drifting gill nets or trawls and the use of non-selective fishing gear are examples of fishing problems that are directly related to cases of decreasing fish resource stocks and damage to the aquatic environment [10]. In South Sulawesi, the latest research conducted by Sudirman et al [11], found that in several places in South Sulawesi coral reefs damaged by illegal fishing activities reached 60%.

From several examples of the problems mentioned above, the use of non-selective fishing gear which continues to grow rapidly has caused a serious problem called the bycatch problem, namely the catching of fish that are not the target of catching (incidental catch), which in practice most of these fish are caught. Discarded into the sea (discarded catch), it can also be fish that are the purpose of catching but are not biologically mature (immature fish) or other types of fish which because of their size or because their species lack economic value

[12]. Sudirman [13] in the Makassar Strait on the fishing gear of Bagan Rambo showed that 97% of the catches of mackerel (*Rastralliger kanagurta*) and scad (*Decapterus ruselli*), were immature fish, and had never spawned. Similarly, most of the captures made using cantrang fishing gear in Takalar seas, particularly jackfruit seed fish (Upeneus sp.), have never hatched. Meanwhile, in terms of environmentally sustainable fishing, it is preferable if the seafood gathered had produced offspring at least once in their lives.

Trawl which is operated in almost all the world's waters is a type of fishing gear that catches by catch in large quantities. For example, trawling operating in the Caribbean and crab sets in the Bering Sea catch large bycatch 12 times and 9.5 times greater, respectively, than the target catch. Meanwhile, for comparison, longline tuna only catches by-catch as much as 1.13 to 1.58 times slightly larger than the target fish catch. Various studies report that most of the by-catch trawls dumped into the sea have died.

In Indonesia, trawling was first operated in 1966. Since then the trawling fishery with the target of catching shrimp has developed very rapidly until finally it has become a source of complexity between trawler fishermen and artisanal fishermen, both of whom compete for the same type of resource in coastal waters. The prolonged complications have resulted in a source of social unrest for traditional fishing communities. Based on these reasons, the government through a Presidential Decree (*Keputusan Presiden*/Kepres No. 39 of 1980) has prohibited the operation of trawling in all Indonesian waters. However, the government through Presidential Decree No. 85 of 1982, has given a special permit for the operation of trawling equipped with a by-catch filter device or called the Bycatch Excluder Device (BED) in the Arafura Sea and surrounding areas. This fishing gear is known as a shrimp trawl or BED-equipped shrimp trawl. In South Sulawesi, the reality is that trawl-like fishing gear still catches a lot of fish in coastal areas with various names such as cantrang, pulley, *paddenreng*, *parengreng* and so on which in principle, the method of catching fish is the same as the mini trawl [14].

The Arafura Sea shows that the number of bycatch annually in the area reaches 332,186 tons/year, this amount is almost equal to the fishery production of South Sulawesi. The use of BED in trawl fisheries in the waters of the Arafura Sea has been shown to significantly reduce bycatch yields by about 42.5% [15]. However, it seems that government regulations requiring the use of BED will reduce shrimp catches.

With the era of globalization, the fishery commodity trading system is not only determined by the "supply and demand" factor alone but is also influenced by various international conventions and agreements and global issues. Several international agreements and global issues that have direct influence even tend to regulate the mechanism of international trade in fishery commodities including catches, among others:

1. International accords aimed at safeguarding fishing resources, such as the UN Convention on the Law of the Sea, the Code of Conduct for Responsible Fisheries, and the Kyoto Declaration. Meanwhile, regional conventions that refer to specific fish species, such as the ICCAT (International Convention for the Conservation of Atlantic Tuna), the Indian Ocean Tuna Commission, and the Agreement on Stradling Stocks and High Migratory Species, exist. Because of the existence of these numerous international treaties, key commercial fish must be harvested from sustainable fisheries resources. Otherwise, these fish will almost certainly be rejected, particularly by importing countries.
2. Global treaties that protect the environment, such as the CITES (Convention on International Trade in Endangered Species). CITES restricts or prohibits the export of some animal species, including sharks, turtles, clams, coral, and frogs.

3. Environmental issues, the dolphine issue, which the United States used to block tuna exports and the embargo on shrimp exports in relation to the use of TED/BED in recent years clearly shows the threat of using environmental issues as technical barriers to the export of fishery commodities that caught in the coastal waters and EEZ of a developing country [16].

The By-Catch Issue. Several European member countries have begun to investigate the size of fish shipped from developing countries, claiming that they violated the Code of Conduct for Responsible Fisheries and the CITES Agreement.

As a follow-up to the ratification of the Code of Conduct for Responsible Fisheries convention and with the pretext of preserving fishery resources and protecting animals included in the CITES list, several developed countries have urged FAO to immediately prepare draft criteria and ecolabelling procedures for traded fishery products. in the global market. Recently, there has been pressure from several developed countries to replace voluntary ecolabelling with compulsory labeling that is universally applicable.

1. The government has implemented various policies related to CCRF, especially in the field of capture fisheries, including:
2. Prohibition of the use of trawling fishing as contained in the decree of Director General of Fisheries Number 340 of 1997.
3. Regulation of the Minister of Marine Affairs and Fisheries No. 2 of 2015
4. Provisions on mesh size prohibit purse seines using mesh sizes smaller than 2 inches on the wing and less than 1 inch on the pocket.
5. Regulation on fishing routes, through as contained in the decree of Minister of Agriculture No. 392/Kpts/IK. 120/4/99.
6. FAD installation settings
7. Protection of fish species and aquatic biota. Prohibition of catching several types of fish resources that are already in a rare or endangered condition, such as: Trochus (*Trochus niloticus*), several types of turtles, clams (*Pinctada sp.*), several types of arowana (*Schlerophagus spp*), dugongs, etc. The Decree of Minister of Agriculture No. 375/Kpts/IK.250/5/1995 concerning the prohibition of fishing for napoleon wrasse (Cheilinus undulatus ruppef).
8. Fishing supervision. Minister of Maritime Affairs and Fisheries No. Kep. 02/MEN/2002 stipulates Guidelines for the Implementation of Fishing Supervision.
9. Determination of potential fish resources and allowable catch (JTB).

Observing what has been done by the government of the Republic of Indonesia, it seems that many things have been done in realizing environmentally friendly fishing. However, the reality on the ground is almost inversely proportional to the policies that have been made.

4 Conclusion

Alignment of the policy prohibiting the use of cantrang fishing gear with the 17 Principles of Sustainable Development Goals, including the implementation of several policies as a result of the ratification of the convention on the Code of Conduct for Responsible Fisheries, and under the guise of preserving fishery resources and protecting animals on the CITES list.. Several countries forward has urged FAO to immediately prepare draft criteria and procedures for ecolabelling for fishery products traded in the global market. Recently, there has been pressure from several developed countries. Thus, voluntary ecolabelling is replaced with

compulsory and universally applicable labeling, then the government has carried out various policies related to CCRF, especially in the field of capture fisheries.

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