Fisheries management policy in Indonesia's Exclusive Economic Zone area

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Abstract. The existing fisheries management within the Indonesian Exclusive Economic Zone (EEZ) is based upon several regulations derived from international conventions, national regulations, as well as conventions mutually agreed by Regional Fisheries Management Organizations members, which is intended to ensure that fish resources in the EEZ area can be managed optimally and sustainably. The sole purpose of this qualitative research is to examine national and international policies that regulate fisheries management in the Indonesian EEZ waters. The analysis was carried out qualitatively with a normative juridical approach and then descriptively elaborated. The results showed that the national regulations issued by the government has already referred to the UNCLOS 1982 and WCPFC Conventions, but the implementation has been far from optimal due to the heaps of regulatory references. Therefore, it is of utmost importance that the government set its policies on setting up appropriate regulations and simplifying all national regulations governing fisheries management in the Indonesian EEZ into a single regulation. It is meant to avoid overlapping arrangements and facilitate a much better implementation.

1. Introduction

Indonesia is a country that has a vast, abundant fish resources in all archipelagic, territorial, and Exclusive Economic Zone (EEZ) waters. The most recent state estimation for total fishery potential owned by Indonesian waters showed a staggering figure of 12,541,348 tons of fish resources [1]. By definition, the EEZ is a path outside and bordering the Indonesian territorial sea as determined based on the applicable law regarding Indonesian waters which includes the seabed, the land below it, and the water above it with an outermost limit of 200 nautical miles measured from the sea baseline of the Indonesian territory [2].

Management of natural resources in the waters of the Indonesian EEZ is not sovereignty [3], but an exclusive sovereign right. Its “exclusive” nature implies that no person/country can carry out activities on natural resources in the Indonesian EEZ without approval from the government. Ownership of sovereign rights over resources in the EEZ area must still pay attention to the preservation of the natural environment [4]. The desire to increase production causes the sustainability of fish resources and fisheries owned by a country to be threatened. One of the biggest problems in the world of fisheries is the global fisheries crisis that has been wreaking havoc since the early 1990s.
This fishery is important to be managed effectively throughout the EEZ, as it can have a significant impact on catches elsewhere [5].

Healthy oceans are essential to achieving sustainable development goals. Protection of the EEZ area is needed to maintain biodiversity and to support the livelihoods of fishing communities [6]. When the world's demand for fish increases along with the growth of the world's population, the intensity of world fishing also increases significantly. UNCLOS 1982 contains principles that respect the protection and preservation of the marine environment in all maritime zones [7]. The actions and policies of a country that owns an EEZ regarding the protection of the marine environment is an issue that is of concern to all countries [8]. In this context, the action that needs to be taken is to carry out the exploration of fishery resources in a sustainable and optimal manner under the vision of national fisheries interests.

Management of fish resources must ensure sustainability, so that the benefits can be enjoyed by future generations. According to UNCLOS 1982, coastal states have an obligation to cooperate with other countries or international organizations in managing sustainable fisheries [9]. Indonesia's participation in the Western and Central Pacific Fisheries Commission (WCPFC), is a means of managing fish resources sustainably and facilitating its citizens to access fish resources as an implementation of good fisheries management. WCPFC is a fishery organization that is currently able to promote Tuna fish resources, although in reality it still needs improvement in its management [10]. Despite the utilization restrains, Indonesia's policy to become a member of the WCPFC has also created international market opportunities for the fishery trade balance.

Indonesian EEZ comprised of no less than 3,000,000 km² of waters [11] and it comes not only with a vast potential of resources, but also with a huge potential of problems. The potential of fish resources in the Indonesian EEZ area requires a holistic legal system development policy, to create order in its management. The existence of policies in the form of national regulations, the UNCLOS 1982 provisions and the WCPFC Convention, becomes important as a guardian of the strategic value of managing Indonesia's EEZ area to balance development with conservation. Based on this, this study aims to examine national and international policies that regulate fisheries management in the Indonesian EEZ waters.

2. Data and Methods
This research was conducted in 2020, using data collected from provisions of the UNCLOS 1982 Convention, Law of the Republic of Indonesia Number 5/1983 concerning the Exclusive Economic Zone of Indonesia (LRI No. 5/1983), and WCPFC Convention. The data obtained were then interpreted using relevant theories and summarized into legal studies as further policy discourse to encourage improvements to the fisheries utilization policy management system. The analysis was carried out qualitatively by using a normative juridical approach and described descriptively. The normative juridical approach is a scientific study that includes activities of taking inventory, describing, interpreting and systematizing, as well as evaluating the applicable positive law (authoritative text), with concepts/understandings, categories, theories, classifications, and methods formed/developed to find juridical solutions to legal problems that occur. The purpose of selecting the analytical method was to explain the policy provisions governing the management of fish resources in the Indonesian EEZ region, which were related to current management.

3. Results and Discussions
3.1 Fisheries Management Policy in the EEZ Based on UNCLOS 1982
UNCLOS 1982 has an important role in explaining legal regimes and developing national regulations [12]. EEZ, according to the UNCLOS 1982 becomes a new legal regime that reflects the aspirations and willingness of developing countries to improve their country's economy. Referring to this, Indonesia, which has an archipelagic status with jurisdiction over the exploitation of living and non-living natural resources, is no longer in doubt internationally. Indonesia ratified UNCLOS 1982 through the Law of the Republic of Indonesia No. 17/1985 on Ratification of the United Nations Convention on the Law of the Sea. The same applies to the Agreement Relating to the Implementation of Part XI of the UNCLOS 1982, which was ratified by Indonesia through a Presidential Decree, No. 178/1999 on December 30th, 1999.
A summary of the normative juridical analysis of the provisions for the regulation of the EEZ region based on UNCLOS 1982, can be seen in Table 1.

### Table 1. EEZ Arrangement Based on UNCLOS 1982

| Article | Substance |
|---------|-----------|
| 55      | Specific legal regime of the EEZ |
| 56      | Rights, jurisdiction and duties of the coastal State in the EEZ |
| 57      | Breadth of the EEZ |
| 58      | Rights and duties of other States in the EEZ |
| 59      | Basis for the resolution of conflicts regarding the attribution of rights and jurisdiction in the EEZ |
| 60      | Artificial islands, installations and structures in the EEZ |
| 61      | Conservation of the living resources |
| 62      | Utilization of the living resources |
| 63      | Stocks occurring within the EEZ of two or more coastal States or both within the EEZ and in an area beyond and adjacent to it |
| 64      | Highly migratory species (HIMS) |
| 65      | Marine mammals |
| 66      | Anadromous stocks |
| 67      | Catadromous species |
| 68      | Sedentary species |
| 69      | Right of land-locked States |
| 70      | Right of geographically disadvantaged States |
| 71      | Non-applicability of articles 69 and 70 |
| 72      | Restrictions on transfer of rights |
| 73      | Enforcement of laws and regulations of the coastal States |
| 74      | Delimitation of the EEZ between States with opposite or adjacent coasts |
| 75      | Chart sand lists of geographical coordinates |

Table 1, explains that the countries regulated in the content of the UNCLOS 1982 Convention are important subjects in international law. According to the Montevideo Convention (December 27th, 1933), the state as a legal subject must-have elements of territory, population, sovereign government, and the capacity to relate to other states. The EEZ regime is a fundamental arrangement in the law of the sea. The consensus was accepted by this regime, providing an extension of jurisdiction and confirming an economically strong position against the coastal state to obtain sovereign rights [13].

### 3.2 National Policy on Fisheries Management in the EEZ Area

The second half of the twentieth century saw major improvements in the legal regime for fisheries management. These management interests remain largely unregulated under international law and to date have only been covered by provisions found in UNCLOS 1982 [14]. UNCLOS 1982 is an instrument designed to serve as the regulatory framework for the management of a country's marine fisheries. The national legal basis that is used as a guideline for managing the EEZ area is regulated by LRI No. 5/1983. LRI No. 5/1983, was principally formulated to protect/manage in an appropriate, directed, and wise way, the natural resources found on the seabed and the land below it, and the water space above it.

Since LRI No. 5/1983 is signed a year later after UNCLOS 1982, it allows the article material it regulates to adopt the provisions contained in that convention. An area that has economic advantages will be utilized by a country as an alternative and complementary to investment through international legal instruments [15]. Summary of normative juridical analysis of provisions for EEZ area regulation based on LRI No. 5/1983, are presented in Table 2.

Table 2, states that the biological resources contained in Indonesia's EEZ are government assets that must be maintained and managed for the common good, as regulated and agreed upon by the international community. The regulation of EEZ management through national regulations is an effort
to encourage the development of the territorial waters of the archipelago, so that they can be managed as well as possible and maintain their sustainability.

Fisheries management involves a series of national policy arrangements designed to achieve sustainable development goals [16]. UNCLOS 1982 regulates the mechanism for the responsibilities and obligations of countries in a cooperation in managing territorial waters [17]. The government as a policymaker must create an appropriate program that enables the fisheries management to meet the desired objective optimally. UNCLOS 1982 regulates jurisdiction over: 1) areas under the sovereignty of coastal states including inland waters, archipelagic waters, and territorial seas; 2) areas where the coastal state has sovereign rights over natural resources, including those in the EEZ and continental shelf; 3) the high seas area. The legal regime of the archipelagic state has an important role to strengthen Indonesia's position in the context of implementing the archipelago perspective [18].

Table 2. EEZ Arrangement Based on LRI No. 5/1983.

| Article | Substance |
|---------|-----------|
| 2-3     | Regulate understanding related to EEZ and territorial boundaries that are under the authority of Indonesia |
| 4       | Regulates: Indonesia's sovereign rights in the EEZ; obligations of foreign countries to carry out activities in the EEZ; the right of foreign countries to carry out activities in the EEZ |
| 5-8     | Regulate the management of environmental sustainability and the sustainability of biological resources |
| 9-12    | Regulate the application of compensation for perpetrators who violate the law and pollute the environment |
| 13-15   | Regulating government mechanisms in law enforcement |
| 16-18   | Regulate the enactment of national regulations that have been issued in the corridor of EEZ management arrangements before changes are made |
| 19-21   | Regulates: reference to provisions of other national regulations in the EEZ management framework; fines for breaking the law; the validity period of this rule |

Table 3. EEZ Arrangements Based on the WCPFC Convention.

| Article | Substance |
|---------|-----------|
| 3       | Pacific Ocean waters connected to the south and east; Applicable to all HMS within the convention area, except for Sauri fish |
| 5       | Take steps to ensure the long-term sustainability of HMS; Best scientific evidence available Precautionary approach; Target stock, non-target species and species originating from the same or dependent ecosystem; Minimization of waste, discharges, catch by lost or abandoned gear, pollution from fishing vessels, non-target species; Protecting biodiversity in the marine environment; Prevent or eliminate overfishing and overfishing capacity; The interests of artisanal and subsistence fishermen; Monitoring, control and supervision |
| 6       | The best available scientific information; Stock-specific reference points; Impact of fishing activities on non-target species and related or dependent species; Take emergency steps |
| 23      | Reporting of statistical, biological and other data; Law enforcement obligations |
| 24      | Prohibition of IUU Fishing in jurisdictions; The effectiveness of the supervision of the coastal state in granting fishing vessel permits; Obligation to use near real time satellite position-fixing transmitter |
| 25      | Obligation to investigate vessels suspected of violating the detention of ships; Investigations and legal action are carried out quickly |
| 27      | Prohibition of discrimination in handling fishing vessels from any country; Obligation to inspect documents, fishing gear and catch |
| 28      | Obligation to develop observer program; The regional observer program consists of independent and impartial observers who are authorized by the commission secretariat; Regional observer programs should be coordinated with other regional, sub-regional and national observer programs |
| 29      | Encouraging ships to carry out transhipments in ports; Member countries can designate one or more transshipment ports; Transfer of cargo between ships in a port or in an area of water under national jurisdiction; Transfers between ships at sea within national jurisdiction; Prohibition of transfer of cargo between ships at sea by purse seine ships within the convention area |
3.3 Fisheries Management Policy in the EEZ Area Based on the WCPFC Convention

Indonesia officially became a member in 2013, with the hope of boosting the national fishing industry [19]. The advantages of Indonesia joining the WCPFC are: (1) expert assistance in conducting fish resource assessment studies; (2) technical assistance for fishing in the high seas; (3) access to research and information regarding migratory species fish resources in the high seas; (4) access to the utilization of fish resources in the open sea; (5) a guarantee of marketing of free sea fishery products to the international market; (6) participation in managing and carrying out conservation actions on fishery resources in the high seas; (7) combat on Illegal, Unreported and Unregulated (IUU) Fishing activities and enforce the rule of law. Adjustment of WCPFC member country registration procedures plays an important role in international efforts to combat IUU Fishing [20].

According to the United Nations, IUU fishing is one of the seven major threats to global maritime security causing loss of economic income, severe environmental damage, and broad livelihood implications for coastal communities [21]. The quality of fisheries governance can be seen from the government's ability to encourage compliance with operational regulations (types of equipment and fixed effects of commercial groups, market value, and excess capacity) and socio-economic control (regional GDP per capita, education level, unemployment, and inequality/poverty) [22].

A summary of the normative juridical analysis of the provisions for the regulation of the EEZ area based on the WCPFC, is listed in Table 3.

Table 3, shows that Indonesia's EEZ is the widest in Southeast Asia and thus also has the highest economic value, namely Tuna. Various types of fish resources abundance within its EEZ provides an optimistic view for Indonesia to develop its fishing industry. The establishment of the WCPFC is intended to overcome the problems of fisheries management on the high seas, which are caused by the absence of regulations on fishing, over-capacity, excessive fleet capacity, less selective equipment, unreliable databases, and multilateral cooperation in conservation and management fish [23].

3.4 Juridical Review of Fisheries Management Policy in Indonesia's EEZ Region

The concept of state-based law cannot adequately explain the diversity of interacting and contradictory normative orders in the current era of globalization [24]. UNCLOS 1982 is very important to claim ownership of natural resources in waters that are the rights of a country [25]. This step is a strategic action as an effort to organize the national legal system for the better. Substitution for LRI No. 5/1983 should be preceded by a study involving the Marine and Fisheries Human Resources Research Agency. It is of utmost importance, so that the determination of policies is measurable in terms of impact and achievement of its objectives. The implementation of national regulations that affect the effectiveness of international policies must be a concern of the government [26].

The implementation of each policy also requires a holistic socialization process. The goal is that the formulation of policy material that has been made can be understood and implemented properly. The process of policy socialization is a prerequisite, so that people will behave as expected by the government. The high and low degree of compliance with written positive law, one of which is based on legal knowledge and understanding. Indonesia's vast EEZ area requires focused comprehensive and appropriate management efforts. The government should encourage the drafting of cooperation scripts for the management of biological resources as well as regional authorities to adjacent countries.

The cooperation document needs to be composed in the corridor of political lobby to avoid disputes over the boundaries and authority for the use of SDI in the future. This is because the management of the EEZ area is inseparable from the interests of the international community and the WCPFC. Indonesia's national legal instruments have supported fisheries management in general on the high seas as well as management in the WCPFC area. Indonesia's ratification of the WCPFC Convention has been addressed with national legal readiness. The readiness of this national law without being followed by good implementation will cause harm to Indonesia.

3.5 Single Policy on Fishery Management in Indonesia's EEZ Region

One of the programs for drafting laws and regulations that has an important role is harmonization, with which will reduce overlapping laws and regulations. Legal assessment is a component that occupies the initial process of the system of forming laws and regulations. Legal assessment includes
activities to identify legal problems that are spread in the community, analyze, and study them. Weaknesses in legal certainty lead to less than optimal policy implementation. Attention to policy issues should not end with the making of the document, because the policy is a living document [27] and no law remains unchanged.

The constitutional reform process is the only democratic way to realize support for change [28]. The number of national regulations governing management in the Indonesian EEZ area proves that the development of marine and fisheries sector policies is still beset with problems that must be resolved. The attainable strategy is to form a new policy in one legislation, because the government as a policy maker has a strong incentive to implement regulatory changes [29]. The action steps and implications of a single policy-making strategy are presented in Table 4.

Table 4. Single Policy on Fisheries Management in Indonesia's EEZ Region.

| Strategy | Study Result | Action | Implication |
|----------|--------------|--------|-------------|
| Replacing and revoking LRI 5/1983 | - Regulations are too numerous to regulate resource management in the EEZ | - Conducting discussions with the House of Representatives on the making of new regulations | - Takes time to simplify all national regulations related to EEZ |
| | - EEZ area management regulations are still overlapping and difficult to understand for policy implementers | - Designing socialization programs to equalize perceptions | - Requires a large budget |
| | | - Harmonize all national regulations that are no longer appropriate and overlapping | - Requires regular socialization of new regulations |
| | | - Develop a budget plan to establish a new regulation | |

Table 4, explains that the lack of coordination, socialization, and understanding of policy material has resulted in regulations issued by the government not being able to guarantee legal certainty. Unforeseen operational obstacles from implementing the policy will present challenges that must be overcome before the policy produces the intended improvements. The statement emphasizes that there will be consequences if the government does not pay attention to the importance of policies that become the legal umbrella in managing biological resources in the EEZ area. The essence of the issuance of public policy is that there is a change in the development paradigm from one that is based on the growth focus of economic interests, to one that relies on sustainable development.

4. Conclusion
Fisheries management in the EEZ waters management scheme, its operation requires government action steps through its policies and implementation. The material stipulated in the LRI No. 5/1983, UNCLOS 1982, and WCPFC, even though it has a sustainable fisheries management paradigm, still needs to be followed up with an equitable implementation for the welfare of the community. In general, there are many national policies governing fisheries management in Indonesia's EEZ and currently require harmonization. This shows the problem of policy governance in the marine and fisheries sector. The economic interest in utilizing fish resources in the EEZ is the government's capital to increase the country's foreign exchange. Good and proper regulatory arrangements in their implementation are an important contribution to optimizing the utilization of fishery potential in the Indonesian EEZ area. The government needs to simplify all national regulations governing fisheries management in the Indonesian EEZ area into one legal umbrella. The aim is to make it easier to avoid overlapping arrangements and make it easier for policy implementers to apply them.

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