



# *The Sentencing System of the Offences Against Blue Carbon Ecosystems: An Overview from Criminal Policy and Islamic Perspective*

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**Abstract-** The research aims to analyze the sentencing system of the offences against the blue carbon ecosystems not only from the perspective of criminal policy but also from the Islamic perspective using the concept of maqasid sharia and maslahah. This is a doctrinal legal study using statutory, conceptual, and comparative approaches to not only address the raised legal problems but also to analyze the solutions. The result of this study shows that the sentencing system of the offences against the blue carbon ecosystem is regulated in Article 73 paragraph (1) points a, b, c, and paragraph (2). However, from the point of view of criminal policy, to enhance the effectiveness of the offenses' enforcement, the mentioned article should be revised by accommodating the deterrence sentencing theory, which is in accordance with the principle of sustainability. Regarding the Islamic perspective, protecting blue carbon resources is part of maqasid sharia and maslahah implementation. Any destructive action to the blue ecosystems is considered a crime against maqasid sharia and can be imposed ta'zir. Every measure to strengthen the sentencing for the perpetrator both individual offenders and corporations is in accordance with the Islamic perspective.

**Keywords-** Blue Carbon Ecosystems, Criminal Policy, Islamic Law, Maqasid Sharia, Sentencing System

## I. INTRODUCTION

Mangrove forests, seagrass meadows, and coral reefs are blue carbon ecosystems that store carbon while also offering co-benefits including improved fisheries and coastal protection, hence, their sequestrations are recommended as a natural climate mitigation.[1] Mangroves are widely acknowledged as particularly carbon-rich tropical ecosystems that offer local coastal people a variety of valuable ecological and economic purposes.[2] Regarding this matter, Indonesia not only has 3.36 million hectares of mangrove forests, which represent nearly 25% of the global mangrove ecosystem, but also features 40 out of the total 54 species of real mangroves, thereby being the most diverse in the world.[3][4] Moreover, mangrove forests in Indonesia store more than 3 billion tons of CO<sub>2</sub>, which is the same as the greenhouse gas emissions generated by roughly 2.5 billion motorized vehicles run in 12 months.[4] Despite their prominent role as a carbon sink ecosystem, they have been greatly impacted by degradation and deforestation, resulting in the loss of approximately 35% of global mangrove forests in the last 5 decades.[2]

Indonesia has the world's largest seagrass beds, covering 293,464 hectares and including 15 species, the most frequent of which are *enhalus acoroides*, *thalassia hemprichii*, *cymodocea rotundata*, and *cymodocea serrulate*. [5] Despite being an undervalued ecosystem given that they are overlooked by mangroves and coral reefs, seagrasses, with their potential to sink carbon, provide a prominent function towards climate change resilience.[6], [7] However, 30% of global seagrass beds are degraded whereas the percentage of meadows in Indonesia is 42.23%, suggesting that the seagrass beds in Indonesian waters are presently in a comparatively less healthy condition.[8], [9]

Coral reefs, also known as *rainforests in the ocean*, are the world's most abundant marine ecosystem (i.e., organic matter synthesis via CO<sub>2</sub> fixation) and have a significant part in the global carbon cycle.[10] Given the fact that their barrier protects seagrasses' sediments in order to minimize erosion and increase seagrass potential to preserve organic matter in soils, it is safe to state that Coral reefs also have an important role in enhancing blue carbon capability in seagrass beds.[11] Indonesia, as a member of the Coral Triangle Area, accounts for more than 30% of the world's total coral reef area, nonetheless, 36.18% of that area consists of destroyed reefs.[12]–[14] The primary drivers of the said coral reef destruction are the bleaching, coastal reclamation and development, and also the use of dynamite or of destructive fishing gears.[15]

Consequently, the depletion of reef structure caused by bleaching and other stresses is expected to deplete the capacity of carbon storage of the seagrass beds nearby.[11] To increase coral reef resilience to climate change, reasonable and effective approaches, such as increasing carbon sink capacity through elevated land-ocean coordination, decreasing terrestrial pollution, and establishing rational coastal zone construction, must be developed to protect coral reefs from stresses resulting from climate change and human activities, thus enhancing their function as carbon sinks and contributing to future coral reef conservation.[10]

Globally, blue carbon ecosystems are expected to keep over thirty thousand teragrams of carbon across one hundred eighty five million hectares, still, the destruction of the said ecosystems is unlikely to entirely halt, and not all losses can be reversed, thus, coastal protection planning presents chances for both protection and restoration.[1] Furthermore, environmental conservation in Indonesia, including blue carbon ecosystems, needs new approach due to the frequent conflicts conservation policies have generated among local populations. The structural approach

represents a “top-down” process that is not socially inclusive. The conventional approach used in the past may give the impression that local residents do not have capacity to be involved in the process. Offering the Islamic perspective will be an innovative approach which can be used for educating people in the grassroots.[16] For that reason, this research will analyse comprehensively not only from the point of view of criminal policy, specifically formulative criminal policy, regarding the sentencing system of the offences against blue carbon ecosystems to enhance their sustainability as a pathway to climate mitigation in Indonesia, but also from the Islamic perspective, given that the concept of *maslahah* and *ta'zir* are recognized by contemporary fiqh scholars.

## II. LITERATURE REVIEW

### A. *The Offences against Blue Carbon Ecosystems*

The protection of blue carbon ecosystems in Indonesia is regulated in Law Number 1 of 2014 amending Law No. 27 of 2007 on the Management of Coastal Areas and Isles *jo* Law Number 6 of 2023 concerning Law Number 6 of 2023 on the stipulation of Government Regulations in Lieu of Law Number 2 of 2022 concerning Job Creation Law. Article 1 point 1 of the Act defines the Management of Coastal Zone and Small Isles as a whole process of coastal planning, protection and management of coastal resources and ecosystems, which includes the integration between the government and local government, as well as between the management and science, to promote society's welfare. This is emphasized by Article 5 that the Act covers several activities regarding the management, exploration, and protection of blue carbon resources in utilizing coastal ecosystems sustainably as an effort to achieve society well-being in general.

In managing the isles and shoreline area, the Act regulates several prohibited actions that threaten the sustainability of blue carbon ecosystems. Firstly, to protect mangrove ecosystems, the Act prohibits several conducts stipulated in Article 35, specifically in point e, point f, and also point g, such as application of destructive strategies which endanger seashore resources and their habitats, the unsustainable mangrove forests' conversion, industrial activities that threaten mangroves' conservation zone, and other damaging activities. Secondly, regarding the measures taken by the Act to conserve seagrasses, paragraph h of the said article mentioned the restriction on using damaging procedures which are endangering the seagrass ecosystems. As for coral reef conservation, letter a, letter b, letter c, and letter d of the mentioned article forbid the detrimental coral mining, illegal taking of coral reef in the protected area, using destructive or explosive materials, or employing any other damaging instruments.

### B. *Maqasid Sharia: the Foundation of Eco-Theology*

Islam covers teachings about the interrelationship between human and God; human and human; human and environment. According to the Islamic perspective, man was created out of clay. In this respect, man is very strong a part of nature. From the origins of man, nature cannot be separated from humans. Al-Quran says that man is also given a responsibility by Allah to take care of nature, which includes protecting it from our own deeds, and in doing so ensuring our own survival. Unfortunately, our potential for destruction seems to be greater than caring for. Therefore, Islam or Al-Quran as the first source also mentioned *fasad*, which means destruction or corruption.[21]

To avoid the destruction of nature and human beings, Allah enacted the sharia which is contained in Al-Quran and Sunnah (prophetic traditions). Islamic law is excluded from sharia. The objective of Islamic law (*Maqashid Sharia*) is to bring benefits to the not only human but also the entire universe.[22] According to Al-Ghazali, the essence of *Maqasid Sharia* is *maslahah*, the benefit of humanity. Al-Qarafi even believes that all religions recognize the existence of *Maqasid Sharia* for the benefit of humanity, which includes justice, prosperity, and happiness. Al-Qarafi emphasized that the benefit cannot be replaced by anything. A bolder opinion was expressed by Al-Thufi who stated that benefit is the strongest argument of all propositions, even more than *Ijma'* (the consensus of *Mujtahid*).[23]

Since the latest century, the concept of *maslahah* has been increasingly discussed among scholars and experts especially to solve the environmental problems. Muslims believe that Islamic law is not out of the date, but still can be implemented in the modern era.[24] This research is part of thus tries to place the concept *maslahah* and *Maqasid Sharia* in the context of protecting the environment amid too many destructions of it we face.

According to Wahbah Al-Zuhaili, *maslahah* or benefit divided into two, namely *maslahah kulliyat* and *maslahah juz'iyat*. *Maslahah kulliyat* is a universal benefit where the goodness and benefits will be felt by many people. Meanwhile, *maslahah juz'iyat* is an individual benefit.[25] Protecting the environment is part of attaining *maslahah kulliyat* due to the sustainable benefits for current and future generations. Thus, protecting the environment and solving the environmental problems are also part of attaining the goals of Islamic law (*Maqasid Sharia*). Hence, every single Muslim has the obligation to realize the protecting environment.[26]

### III. METHOD

This doctrinal legal research uses statutory, conceptual, as well as comparative approaches. Those approaches are used both to address the raised legal problems and to analyze the solutions. The used data is secondary data consists of Law Number 1 of 2014 amending Law No. 27 of 2007 on the Management of Coastal Area and Isles *jo* Law Number 6 of 2023 on the stipulation of Government Regulations in Lieu of Law Number 2 of 2022 concerning Job Creation Law.

### IV. RESULT AND DISCUSSION

#### A. *The Sentencing System of the Blue Carbon Ecosystems Offences from the Perspective of Criminal Policy*

To enhance the enforcement of the above-mentioned prohibitions, the Management of Coastal Zone and Small Isles Act stipulates criminal sentences in Article 73 paragraphs (1) and (2) which include imprisonment and fines. The former paragraph regulates the punishments, which the minimum imprisonment is two years, and the maximum imprisonment is ten years. And that fines that imposed from two billion rupiahs until ten billion rupiahs, for those who commit the aforementioned prohibitions deliberately. On the other hand, the latter paragraph mentions the possible sanctions that might be imposed on the perpetrator of the said prohibitions due to negligence, which the maximum imprisonment is five years, and the maximum fines is one billion rupiahs. The sentences, that consist only of imprisonment and fines, indicate the focus is more inclined to the retributive side of the criminal sentence (solely aims to punish) rather than the deterrence part.

Taking into account the prominent role of blue carbon resources in storing carbon, the sentencing system as an enforcement instrument of its protection should be revised to support the preventive purpose of its conservation since one of the purposes of the Act's enactment, as stated in Article 4, which generally aims to protect coastal resources which includes protection, preservation, rehabilitation, utilization and to enrich it. This also applies to small islands and its ecological systems sustainably.

Additionally, based on previous enactment the coastal resources management system ought be conducted under the sustainability principle to attain 3 (three) aims, including the natural resources use exceeds neither the potential of living resources to regenerate nor the extent of inventive substitution of non-living resources within the shore area, the current exortion of coastline ecosystems musn't jeopardize their sustainability for the next years, as well as exploration of blue-carbon resources in which have unidentified risks shall be managed with both caution and sufficient science-based data.

Governing coastal zones means coastal area planning needs to consider environmental variables so that the area can offer long-term environmental services to the communities that live therein.[17] That being said, the ecological aspect is the most significant part of coastal zone governance, including the protection of mangroves, coral, and seagrass beds.[17] On one hand, responsible management prioritizes financial objectives proportionally compared to ecological interests, not only in the near future but also in the long run.[17] In addition, the coastline ecosystems at the area's limit are the most vulnerable to damage, including the detrimental causes against seagrass meadows, corals, and mangroves, which occurs naturally and is worsening due to irresponsible human activity, regardless of the availability of superior natural resources in this area, that should be developed for the welfare of the Indonesian people.[18]

Considering the evolving aspects of climate change, mitigation, and adaptation strategies must be incorporated into relevant legislation to successfully manage Indonesia's coastal regions and small islands. [19] One of the strategies is strengthening the preventive measures of blue carbon resources by enacting a deterrence-based sentencing system that accommodates the sustainability principle thus ensuring the said long-term coastal resources services. This strategy is also supported by the fact that not only the destruction of coastal resources requires a long period of restoration but also costly expenses. Furthermore, the deterioration of coastal ecosystems and habitats is negatively affecting human well-being worldwide,[20] which resulted in social cost losses. Consequently, the above-mentioned offences against blue carbon ecosystems along with their sentences must be regulated as preventive measures, yet the existing sentencing system does not sufficiently strengthen the deterrence aspect therefore it should be revised.

Given the stipulated sentences that will be imposed on the perpetrator of the related criminal acts, in the study of criminal policy, the formulation of policy as the foundation of *penal* law enforcement has a prominent role in both eradicating and preventing the offenses from occurring. To address the deterrence aspect, the sentences should refer to relative (preventive) sentencing theory to curtail the offences against blue carbon resources. For that reason, the Act shall accommodate *penal* measure, which is the restoration of damaged blue-carbon ecosystems, as the implementation of the double-track system in *penal* sanctions.

The above-mentioned *penal* measure should be imposed on both the individual perpetrator (as regulated in Article 103 paragraph *e jo* Article 108 of the Criminal Code 2023), and the corporation, referring to law about the

environmental protection (see: Article 119 point c of Law Number 32 of 2009), regardless the violated paragraphs. However, the differences regarding its application lay in the nature of the sanction. While the *penal* measure is formulated alternatively with the criminal sanctions for individual offenders, it serves as the punishment for corporation that can be given along with the fines. Additionally, the Act shall also regulate additional punishments to enhance the preventive orientation, such as the confiscation of profits obtained from criminal acts and the seizure of corporations' assets. The former sanction is applied to both legal persons, whereas the latter sanction is only for corporations if they fail to pay the imposed fines. Nonetheless, the current provisions of criminal fines in Article 73 of the Act should be followed by the regulation that addresses its objective which is to restore and rehabilitate the destructed blue carbon ecosystems and also the current coastal habitats. In conclusion, the proposed sentencing system should be regulated in the current provisions regarding Coastal Zones and Isles thus deterring legal persons commit criminal acts that hinder the sustainability of blue carbon resources.

#### B. *The Sentencing System of the Blue Carbon Ecosystems Offences from the Islamic Law Perspective*

Based on previous explanation, protecting the environment is part of protecting the objective of *sharia*. Every Muslim is bound by the obligation to care for the environment. We may use the environment for human benefit, but we must not overdo it. Greed in using the environment will have an impact on environmental damage, which is contrary to the *maslahah* and *Maqasid Sharia*.

To protect the *Maqasid Sharia*, Islam regulate several prohibitions accompanied by some type of punishment. Therefore, Islam recognizes criminal law known as *jinayah* (Islamic criminal law). Commonly, the term *jinayah* refers to prohibited acts related to property and/or life. However, Abdul Karim bin Muhammad Al-Lahim stated that *jinayah* is not only limited to property and life but includes all aspects that are the aim of Islamic law.[27] The term *jinayah* is used generally for all types and acts of crime. There are three types of crimes in *jinayah*, namely: *hudud*, *qisas*, and *ta'zir*.

*Hudud* means a punishment with a certain level that has been determined (in the *Sharia*) as Allah's right, such as *zina* (the acts of adultery) and *qadzaf* (accusing someone of adultery). *Qisas* means punishing the perpetrator of a crime like the crime he/she has committed. For example, perpetrators of the crime of murder are punished with the death penalty. Like *hudud*, *qisas* is also enacted in by Allah and The Messenger. And *ta'zir* means passing the law to teach a lesson, which the punishment is not specified in the *hudud*. *Ta'zir* are other types of crimes are not regulated in Al-Quran and Hadiths, so that the it's punishments also does not enacted yet in both Al-Quran and Hadiths. *Ta'zir* stipulated by government which is based on benefit or avoiding harms and damages.[28]

Al-Qarafi, as referred by Wahbah Zuhaili, mentioned several provisions of *ta'zir*. *Ta'zir* punishment is handed over to the judge. However, scholars differ in their opinions regarding the maximum limit of *ta'zir* punishment. The Maliki school states that the punishment of *ta'zir* is unlimited, while according to Abu Hanifah and the Shafi'i school, the punishment of *ta'zir* cannot exceed the lowest punishment in the *hudud*. According to Syafi'i, there is no obligation for the government to carry out *ta'zir*. If the government wants to, *ta'zir* can be implemented, and if not, the government can abandon *ta'zir*. Kinds of *ta'zir* punishment can vary according to the law stipulated by government. Not all mistakes in *ta'zir* are called immoral acts. So that, *ta'zir* pays close attention to the place and time of the violation occurs.[29]

Many states focused to regulate law for environmental preservation in the end of twentieth century. Unfortunately, most states still do not enforce it seriously. Therefore, through this article, we offer reformulation of environment crime based on *Maqasid Sharia* perspective with *ta'zir* as the method of criminalization. Indeed, environment crime is not part of *hudud* because did not mentioned in Al-Quran and Sunnah explicitly, however we are still be able to punish the offender of it severely through *ta'zir*.

The aforementioned explanation indicates that the conservation of blue carbon resources is a form of efforts to attain both *maqasid sharia* and *maslahah*. In so doing, the offences against blue carbon ecosystems are deemed as *ta'zir*, hence the punishments are determined by government. That being said, the ruler has the authority to enact the sentencing system of the said criminal acts.

## V. CONCLUSION

From the analysis above, the stipulations of sentencing, which are based on sentencing theory in the form of preventive/deterrence theory as reflected in the above-mentioned sentences, are in accordance with the sustainable principle regulated in the Act. Hence, as one of the law enforcement instruments to protect blue carbon ecosystems, criminal law can effectively prevent criminal acts from occurring in order to achieve not only the sustainability of blue carbon ecosystems but also the welfare of the people living on the islands. Regarding the Islamic Perspective, protecting blue carbon resources is part of *maqasid sharia* and *maslahah* implementation. Any destructive action to

the blue ecosystems is considered a crime against *maqasid sharia* and can be imposed *ta'zir*. Every measure to strengthen the sentencing for the perpetrator both individual offenders and corporations is in accordance with the Islamic perspective.

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