

RESEARCH ARTICLE

# Sea Pollution in the Coastal Area: Problems and Challenges in Law Enforcement

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**Abstract**

Natural resources must be guaranteed sustainability, among others, by maintaining the marine environment, marine pollution occurs due to heavy metals or plastic waste that scattered and household waste. The enforcement of environmental law against marine pollution can be seen in Law No. 32 of 2009 on Control of Environmental Management Number 51 Year 2004 regarding Sea Water Quality Standard explain about standard of quality of sea water can be said normal or contaminated. The problems that exist in this case is the analysis and solution to marine pollution in coastal areas in Jakarta Bay, Kali Baru, Cilincing North Jakarta. Environmental inhibiting factors pollution of coastal areas of the sea is the lack of human resources will be aware of the importance of safeguarding our oceans. Because we are without the sea is nothing because most of the food supply is from the sea e.g., fish or shell. Although there is now cultivation by using ponds as well but still many people choose sea fish because it is still considered fresh and not contaminated by harmful substances. The sea is a highway that connects all corners of the world. Many cities in Indonesia are in coastal areas that have great potential to make garbage or waste collisions.

**Keywords:** *Law Enforcement, Coastal Areas, Pollution, Environmental Damage, Legal Policy*

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## 1. INTRODUCTION

The development of environmental law today can not be separated from the movement of the world to give greater attention to the environment, given the fact that the environment has become a problem that needs to be tackled together for the sake of survival in this world. Environmental problems have occurred one of the important issues in the national and international world where an environmental problem that occurred in a country has become the responsibility of the international world. Environmental issues that occur include environmental pollution, resource degradation and global warming. The sea is primarily a highway connecting all corners of the globe. Through the sea, the people of various nations held all forms of trade-commodity exchange to science. Natural resources must be guaranteed sustainability, among others, while maintaining the marine environment. On the conditions that connect to the nature of the sea also the system of management in natural resources that exist. The growth of the created wisdom coordinates the sea or in meeting the needs of the sea, is a step to realize the preservation of the marine environment, all the sources contained in the sea are not limited. In the pursuit of the sea such as fishing, fish species, excessive use of trawlers is very dangerous and causes the extinction can not be felt in the short term. Marine pollution gives a considerable impact on the surrounding environment if the surrounding is a population where the population in general livelihood sebagai fishermen. The increasingly widespread settlement of the population has resulted in an increase in household production resulting in the development of industrial parks in big cities.

Urban industry has a positive influence to produce goods or products and services that can improve people's lives. It is also negative because it can cause water, soil, and air pollution. This will lead to pollution in coastal and marine waters, as all land-based waste, whether coming

from urban settlements or sourced from industrial estates, eventually leads to shore and sea. Sea pollution is caused by humans and the harm resulting from pollution to the ecological stability of the sea.

## 2. METHOD

This research was conducted on the north coast of Tuban Regency by examining the level of seawater contamination with parameters metal. The study area consisted of 14 sampling points, from east end to west end of Tuban Regency indicated in Figure. The flow of research is as follows:

### 1) Research preparation

Preparation tools for primary data collection are water sample, pH meter, thermometer and GPS (Global Positioning System).

### 2) Data collection

Data collection is divided into two aspects. Each aspect has primary and secondary data. Primary data obtained from sampling in the research area. Collection secondary data in the form of general map of Tuban Regency, data utilization of Tuban coastal waters, Tuban industry data and data on business activities on the north coast of Tuban.

### 3) Sampling method and sample point determination.

According to Ramessur in Amin (2011), water samples sea taken with a 500 ml polyethylene sample bottle from a depth of 0-30 cm. From previous research regarding sampling, then we take samples at a depth of 30-50 cm, because at depth this is considered to be representative of the vertical homogeneity of the dispersion pollutants and avoid surface effects. The samples are taken and then given a few drops of HNO<sub>3</sub> up pH <2. This treatment prevents oxidized metals, precipitate or clamp on the wall or bottom of the container. The water sample is then inserted in the ice box and then stored in a refrigerator at laboratory. At the time leading up to the analysis, the

sample removed from the refrigerator and allowed to arrive back to room temperature (stable), shuffled, and so on prepared to be analyzed for heavy metal content by using AAS. The sampling point determination is chosen randomly or intentionally (purposive sampling), the determination of this location should be referring to the physics of the loaski in order to represent the state of these waters (Nasution, 2001).

#### 4) Parameters of seawater quality

The analysis of the logan parameters corresponds to KepMenLH No 51 of 2004 about seawater quality standard. Identification and analysis of data from laboratory results, then enter the result data into the determination pollution index.

#### 5) Laboratory Analysis

Seawater samples were analyzed for metal content using AAS method at Jasa Tirta Laboratory Surabaya.

#### 6) Data analysis and discussion

The data obtained from this research is the value parameters measured i.e., metal content, pH. So, purposive sampling technique is technique determination of samples with certain considerations (Sugiyono, 2008). This technique can be interpreted as sample selection done on the basis of certain goals, for example pollution in seawater hence taking point location as well must be at the point of pollution. According to Hanim (2007), the outline of the sampling point being required:

- a. The point in the perfect mixing zone (direction vertical) waste with sea as far as 500 meters to representing pollution between land and sea. This data describes the average quality of the ocean at area of study.
- b. The point in the area is more to the middle, which is considered the effect of waste is small or insignificant far more than 1000 meters. This data is enabled as a control or quality background of sea water.

Secondary data in the form of general map of Tuban Regency become the initial reference for us to determine the sampling point, because it must also be compared with the secondary data others. In accordance with the purposive sampling technique, then we determine pollutants in the coastal district Tuban, pollutants that exist include the Sea Tourism Park Sukolilo, Fishing Auction Place, Port Cement, Port of Tuban, Pantai Tasik Harjo and some rivers such as Boto river, Sembong river and river Klero that boils down to the coast that is possible carrying pollutants load from the industry. Then, on Google Earth program, we draw 500 lines meters of pollutants and 2000 meters meters from the mainland, and the results got 14 initial sampling points. Temperature, then analyzed by determination pollution index of each sample point.

#### 7) Conclusions and suggestions

From the discussion it can be taken a conclusion which answers the purpose of the research and is produced a suggestion for further research.

### **3. RESULTS AND DISCUSSION**

#### **A. Sea Water Environment Pollution**

Coastal environment pollution can occur in any waters around the world especially when there was an oil spill resulting in the occurrence of pollution entry of foreign substances into the environment thereby altering properties of physical, chemical and physical properties biological environment (Ketchum, 1972), marine pollution can also occur on a scale for example by agglomeration or centralization of the population at a site, tourism development, or emergence industrial areas in coastal areas.

On n fact almost all of that activity is in the coastal area dumping materials their waste is sea. In general, a lot of people assume that the sea is the place final waste disposal in non-living space limited and now lautpun become the center waste disposal in the form of solid waste, as well as

liquid waste or radioactive waste. Solid waste is in the form of domestic waste as well as industrial solid waste, while waste liquid in the form of chemical fluid result of activity process. To know the of society understanding on the execution of capital punishment in Jakarta and Tuban Regency Community, the researcher found the result in Table 1 below:

**TABLE 1.** Seawater Pollutan Materials

No	Pollutants	Source of Pollution Source
1	Pathogens Trash and human waste (feces)	Trash and human waste (feces)
2	Sediment of Solid	Agricultural Enterprises
3	Fresh Water	Waste Garbage domestic and industrial materials Drainage system is less good
4	Organic Pesticides	Pesticides such as fungicides, herbicides, insecticides, rodenticides, and as well as the addition of organic materials such as hydrocarbons halogenated, petroleum and chemical industries

In terms of geomorphology, topography at The city of Jakarta is divided into 4 characteristics physical namely: 3% consists of terraced areas low, 10% consists of terraced areas surging, 35% consists of hilly terrain, and 52% have hilly characteristics until the mountainous (Jakarta, 1994).

The heaviest topography with hilly characteristics until the mountains is at the most West Island Weh. In the East of Jakarta There are mountains that peak from the highest the whole of Jakarta is Gunung Salak (583.6 m dpal). The process of the occurrence of Weh Island is an island volcanic which is thought to have originated from the atoll island that has been raptured from sea water. Process of occurrence the rapture is passed in three stages, resulting in a structure of three terraces ocated in different heights.

The geological conditions in Jakarta Municipality are divided into 3 types of rock, which is 70% consists of type rocks of volcanic origin, 27% of which are of the type sedimentary rock, and 3% is a type of rock alluvial deposits.

In this study the source of water pollution in DKI Jakarta originating from landbased caused by three categories of waste, among others, domestic waste, industrial waste and market waste. Other than that the decrease in river flow causes dilution or river repair power does not take place good and continuous, as well as activity on along the Pantura Beach of Jakarta.

Domestic waste is very large and dominates waste generation in Jakarta. Emergence of the total production of 10 141 (m<sup>3</sup> / day), school 955 (m<sup>3</sup>/ day), and offices 8 520(m<sup>3</sup> / day), or dominate around 88%. As for the reason people around the river to throw away waste directly to the river are: The absence of polling stations in some villages is on around the watershed. Location of TPS or relative waste collection basin further than the distance to the river. According to the community, dumping waste into rivers are faster, cheaper and have no impact directly to the disposer or the community throw away. Unequivocal implementation of sanctions against garbage disposal at river body.

The public perception of the most about pollution is causing the emergence of nests disease, pollution to water and soil, damage and harm to the environment and impact for tourism. The most dominant cause of pollution is lack of public awareness of hygiene environment. The impact of wastewater and solid to the environment, respondents answer the most damaging the environment, developing disease seeds, causing odors, air pollution and increasing fish reduced. While the impact of liquid and solid waste on humans most dominant disrupt health and illness.

## **B. Aspects of Legislation**

There is a connection between the understanding of the Jakarta community and the philosophical foundation of the rules on execution, it is built through public understanding in the city of Tuban and the city of Jakarta [9]. In this case the death penalty in Indonesia is still rarely used except by big-time criminals who have harmed the nation of Indonesia economically, materially, and the dignity of the nation in the eyes of other nations. Increasing the execution of the death penalty in the future is still considered to hurt the right of the family for example in the family there is a death penalty he is the father he as head of the family who are still working for his young son. Can be seen in table 2 below.

**TABLE 2.** The Dynamics Relation Between Jakarta Society and Tuban Society Understanding with Philosophical Basis of Legislation on The Implementation of the Criminal Offense of Legislation Aspects

No.	Society of Jakarta	Tuban Society
1	Respect local wisdom	The psychological impact of the general public
2	Clear waiting time	Execution time is clear
3	Value of Religion, Custom and International	Capital punishment is necessary A bit of a painful / torturous element
4	Execute openly	Transparency in execution

Based on the above table, there are similarities and differences as follows: The equation on the form of execution of death penalty that quickly increases death and a little torture. In addition, both want to confirm the time of implementation. While the differences in the city of Jakarta, there must be a room of forgiveness, and who has been awaiting execution should be changed to criminal for life. As well as legal refinement there are 3 values to be considered (religious, customary and international). And the place of execution can be closed even in public places. While understanding the Tuban community, executions can be carried out openly to provide psychological effects to the public and avoid public suspicion of the realization of dead



execution [10]. And the possibility to be executed in accordance with the conviction of the convicted law or in accordance with the sense of community justice. In this case the community is given a lesson through how to see the prospect of error, they are not a way of judging to death. should be taught until they are deterrent and feel guilty and do not repeat it.

### C. Aspects of the Apparatus

The dynamics of the relationship between the understanding of society and the philosophical basis of legislation on the execution of capital punishment, there is improvement of the performance aspect of the apparatus. It can be seen in the table 3 below:

**TABLE 3.** The Dynamics Relation Between Understanding Society of Jakarta City and Tuban Regency with Platform Philosophical Laws Regulations about Implementation of Deadly Criminal Aspects of Performance Apparatus

No.	Society of Pekanbaru	Siak Society
1.	Non-legal factors	Selective Cutting
2.	SOP Improvements	Some are already procedural
3.	Openness / Transparency	Understanding as a state servant
4.	Discriminatory	It needs to be watched

The table above shown similarities and differences. The equation is the revamping of the performance of the apparatus, who understand the consequences of the duty of the state servant, the apparatus professionalism, need to avoid bribes. In addition, the equation on the aspects of public performance monitoring, this is to avoid the intervention of certain parties and public suspicion of executions are played. The difference according to the understanding of Jakarta society there is some improvement, as there is human, there is an executor educated and experience. In addition, it needs improvement where the officers are still picking cases, always working based on public pressure. Meanwhile, according to the

understanding of Tuban society, the apparatus understanding on the obligation to carry out the duty of the state, so that the execution of death does not become a psychological burden and for which functioning as informant is not necessarily executed by death.

#### **D.Aspects of Cultural Values (Malay)**

Community understanding in Jakarta and Tuban about the dynamics of the relationship between the understanding of society and the philosophical foundations of legislation on the execution of capital punishment, from the aspect of cultural values (Malay), can be seen in table 4 below:

**TABLE 4.** Dynamics Of Relation Between Understanding of Pekanbaru Town Society and Siak Society with Philosophical Platform Legislation Regulation About Dead Criminal Implementation from Aspect of Cultural Value (Malay)

No.	Society of Jakarta	Tuban Society
1.	Malay is identical with Islam	Malay is identical with Islam
2.	Pay attention to local wisdom	Understanding of Malay cultural teaching
3.	The value of a universal culture	Add a budget
4.	Capital punishment does not fit the culture	Involves customary functionaries

Based on the table above, there are similarities and differences as follows: The similarity is Malay Culture identical with Islam and in Islam claim to be capital punishment. Legal reform should consider local wisdom / Malay cultural values, also known as Malay cultural teaching. Meanwhile, difference is majority Jakarta society demanded the capital punishment because it has become a universal value, although it can be adapted to the context of indigenous culture. While in Siak society need to strengthen the value of consensus and the government must allocate budget to involve functionaries of customary institutions to play a role in coaching.

### E. Aspects of Supervision and Development

The understanding of the people of Jakarta and Tuban about the dynamics of the relationship between the community and the philosophical foundations of understanding the laws and regulations on the execution of the death penalty, has not run completely because people in their area still use customs that he thinks may still be able to deal with problems other than the death penalty from the control and coaching aspects can be seen in Table 5 as follows:

**TABLE 5.** Dynamics of Relation Between Understanding Society of Pekanbaru Town and Siak Society with Philosophical Platform Legislation Regulation About Implementation of Deadly Crime from Monitoring and Coaching Aspect

No.	Society of Jakarta	Tuban Society
1.	Judges and the public are watching	Supervision and Transparency are required by the rules
2.	Immediate execution	Supervisors are required

Based on the above table, there are similarities and differences as follows: Equations such as the need to control both internally and externally, either by forming a team, to oversee the time of execution of punishment for marine biota destroyers in the coastal areas of Java and DKI Jakarta, the intervention and influence of other countries law advisor. In addition, the equation is consistent in enforcing the rule of execution of capital punishment, because it will harm the right of the state and the right of inmates, in Jakarta the process of coaching is not necessary isolation / rights of prisoners. In addition to needing value consciousness, "God forgives", and building awareness from the beginning is accompanied until conversion to face death. Required rules to criticize the law to confirm the deadline for the execution process. The understanding of the people of Tuban Regency should be independent, and supervision oversight is limited, one of the standard supervisions of operational procedures. Supervision must be carried out by an already

skilled and transparent institution if not transparent would be arbitrary and easy to be bribed by top state officials to hide who the biota company is in the coastal area.

### F. Aspects of Religious Values

From the aspect of religious values development of the understanding of the people of Jakarta and Tuban Regency about the dynamics of the relationship between the understanding of the people about the importance of protecting the environment in the coastal areas and the philosophical foundation of the law on the execution of the death penalty for the companies may be given a proper permit and pollute coastal areas can damage marine ecosystems and biota and plants in the coastal areas can be seen in table 6 as follows:

**TABLE 6.** Theme (Dynamics) Relationship Between Understanding Community City Jakarta Legislation About Implementation of Importance of Religious Aspects

No.	Society of Jakarta	Tuban Society
1.	Culture is forgiving	The death penalty according to religious belief (Islam)
2.	Moral / Morals universal values	The death penalty seemed to precede God
3.	According to Eastern custom (Islamic values are accommodated)	Need forgiveness
4.	Full mentoring	Full mentoring / guidance.

Based on the above table, there are similarities and differences as follows: The equation is the need for guidance from the beginning so that the death-row inmates are prepared, that the death penalty is part of the destiny [15]. In Islam it is known *qisas* and its value is universally recognized, although there is an element of forgiveness by replacing it with a fine. That the difference between the people of Jakarta and the Malay culture is identical with Islam, it is necessary to include religious values, such as the cultivation of convict religiosity about the nature of death /

resignation according to destiny, and the beheading of the value / death quickly, for it needs to involve MUI (Muslim Leaders Council Indonesia) / religious / religious organizations. In addition to speeding up the execution process requires a presidential breakthrough to cut the bureaucratic chain / refuse the request in this case the president must think carefully because if not ad apihak who feel harassed the family because if who were given the punishment is as head of their family akn lost the head of the family forever and lost father as well as their husbands. While the understanding of Tuban society as a law comes from God, one side of execution dies before God's law over one's life. In Islam *qisas* (capital punishment) is not contrary to Islamic beliefs.

### G. Aspects of Global Value Change

Aspects of Global Value Changes, the construction results of elements of the minds of the people of Pekanbaru and Siak District about the dynamics of the relationship between the understanding of society and the philosophical foundations of the legislation on the execution of capital punishment for the destructive and destructive suspects, can be seen in table 7 as following:

**TABLE 7.** Theme (Main) Dynamic Relation Between Understanding the Community City of Jakarta and Tuban Regency with Legal Regulation of Philosophical Platform on Infringement of Death Criminal of Aspects of Changes of Global Value

No.	Society of Jakarta	Tuban Society
1.	Countries should not intervene	The death penalty is still necessary
2.	Indonesia is still low civilization	The abolition of capital punishment must be at the same level
3.	Need balance	Change the total mind set
4.	There should be a waiting time.	State Consideration of International
5.	People think broad and advanced	Institutions - for the good of the nation besides the death penalty there is still another way fixed

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No.	Society of Jakarta	Tuban Society
		thinking and not yet thinking about the good of the death penalty

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Based on the above table, there are similarities and differences as follows: The equation is not yet time to eliminate the death penalty, because civilization is still low, or the mind set has not changed completely because they consider the death penalty is a punishment that should be given by God to his servant not fellow human beings. Moreover, not all westerners are well suited to protect the national interest because their society has been educated while in Indonesia is still not running well because education is not yet supportive and western society is modern. While the difference, the understanding of Jakarta people that, the state should not be intervened, or rule of law applied. The abolition of the mainstream of capital punishment has not touched the substance of even injustice. The purpose of the law is to balance, for example, global Islamic values. While the understanding of Tuban society, that the death penalty is the authority of the state, the abolition of the death penalty can be done if there is a punishment similar to the death penalty, in addition the authority to eliminate life is the joint ownership of God, the State and humans are not authorized. And the State needs to consider accommodating the values offered by the International Ham commission and international amnesty institutions with due regard to the good of the Indonesian nation.

The importance of improvement based on the dynamics of the relationship between the understanding of society and the philosophical basis of legislation on the implementation of capital punishment above, supported by data from questionnaire results from elements of society in Jakarta and Tuban District. The understanding of the Jakarta community about the dynamics of the relationship between the understanding of society and the philosophical

foundations of the legislation regarding the execution of the death penalty above (the philosophical basic conformity of the legislation on execution of capital punishment with the values that exist in society in Jakarta), based on several indicators understanding, overall understanding of the City of Jakarta on the philosophical basic suitability of the rules on execution of capital punishment with the values that exist in the community in Jakarta and Tuban.

#### **4. CONCLUSION**

Conclusions of law enforcement at sea born from the UN Sea Law Convention 1982 Chapter XII provides for the Protection and Conservation of the Marine Environment, while Part V of Chapter XII provides for the International Regulations and National Legislation to prevent, mitigate and control pollution of the marine environment. Implementation of administrative sanctions and death penalty sanctions is not very easy to accept and run by the community. Some obstacles arise in the application of administrative sanctions. Enforcing a rule of law other than adequate law or regulation requires consistent apparatus. The party responsible for the business if still not complying with the provisions of the legislation may be subject to administrative sanctions as well as criminal sanctions. Sustainable development involves all parties into a new paradigm to engage certain parties. The need for administrative law enforcement instruments contains a lot of efforts that focus more on guidance or prevention than with prosecution or punishment such as supervision. The enforcement of administrative sanctions and the death penalty is an integrated action with the wisdom of the social environment aimed at promoting sustainable development that is environmentally sound. To achieve the intended target then the enforcement of administrative sanctions becomes supporting facilities that can improve the existing environmental policy.

## 5. DECLARATION OF CONFLICTING INTERESTS

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*A nation that destroys its  
soils destroys itself.*

*Forests are the lungs of  
our land, purifying the air  
and giving fresh strength  
to our people.*

**Franklin D. Roosevelt**