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The Impact of Negative Externality of Waste on The Coastal Beach of Lampung for The Community from an Islamic Economic Perspective

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Abstract: The impact of negative coastal externalities in Lampung Bay has produced waste that pollutes the marine environment around the coast of Lampung Bay. Although it is not visible to the naked eye, residents feel negative impacts that have become serious problems that have not yet been entirely handled. This article aims to research, study and produce decisions regarding the externalities felt by the surrounding community regarding the impact of negative externalities generated from waste which is the source of all environmental problems in Lampung Bay, and what consequences they have from an Islamic economic perspective. In our research, the method used is field research carried out directly in the field based on population and sampling to determine the negative impact of waste on the community. Garbage is produced from a production process that inevitably has negative and negative externalities. The testimonies of residents, several magazines, and direct observations led this article to the conclusion that it is essential to conduct a particular study to decide which negative externality impact is more dominant regarding the causes of continued accumulation of waste from year to year as well as the factors and implications of problems related to waste in Lampung Bay.

Keywords: Gulf; Islamic; Human

JEL Classification: D62; P48; Q53

Introduction

Externalities are described as the effects felt by one person caused by the actions of others. There are several definitions of externalities & classifications of different types of externalities in the literature. The definition of externality implicitly distinguishes between two categories, namely externalities in terms of profit relations and consumption externalities whenever the utility level is affected, based on the research focus (Prasetyia, 2013).

An externality is an act with specific side effects for other parties that have both beneficial and unfavorable impacts Sandi and Dawood (2019). Externalities occur when the actions of one party can have side effects for other parties without compensation. Externalities are divided into two, positive externalities and negative externalities. Externalities theoretically

occur because of the difference between an article's marginal social and personal costs. In the case of environmental damage, this causes a negative externality because there is no additional cost element in the form of social costs, which are included in the final price component of the article. Therefore, government intervention is needed in the form of taxation or subsidies to ameliorate the effects of externalities.

American public health experts make a line: waste is not used, not liked, or thrown away, which comes from human activities, and does not occur by itself. From this limitation, it is clear that waste results from human activities discarded because it is no longer useful. Thus, the waste contains the principle that there is an object or solid material, a direct/indirect relationship with human activities, and the object or material is no longer used (Notoatmodjo, 2003).

According to the World Health Organization (WHO), the definition of waste is not used, not used, not like, or thrown away that comes from human activities and does not happen by itself (Budiman, 2006). Waste Management Law Number 18 of 2008 states that waste is the residue of daily human actions and/or from natural processes in solid form. (Slamet, 1994) argues that waste is not desired by the owner and is solid. At the same time, Hayat and Zayadi (2018) said that what is meant by waste is part of something that is not used, disliked, or something that must be disposed of, which generally comes from activities carried out by humans (including industrial activities) but is not biological because human waste is not included in it. (Manik, 2003) defines waste as an object that is not used or desired and must be disposed of, produced by human activities.

Lampung Bay is a bay in the waters of the Sunda Strait, located south of Lampung, Indonesia. In this bay, two rivers flow into the city of Bandar Lampung. This bay is situated between Bandar Lampung City, South Lampung Regency, and Pesawaran Regency; Panjang Harbor is also in this bay. The area of Lampung bay is about 1,888 km². Lampung Bay is a shallow water area with an average depth of 20 meters. Pasaran Island, Sebesi Island, Sebuku Island, Legundi Island, Kelagian Island, Condong Laut Island, Tangki Island, Tegal Island and other small islands are a group of islands located in Lampung Bay.

The coast of Lampung Bay includes land and water, with a geographical position located between 104°56'-105°45' east longitude and 5°25'-5°59' latitude. The total land area is 127,902 ha, and the water area is 161,178 ha. The area directly adjacent to the sea (Lampung Bay) has a flat slope (0-3%), with an elevation of 0-10 m above sea level (asl), while the area towards the mainland has a slope ranging from gentle (3-8%) to very steep (>40%), with elevations ranging from 10 to >1,000 m asl. The relief groups in the area towards the sea are flat, and in the land, directions are various, namely undulating, rolling, and hilly.

There is a limited study related to (Wahyudin et al., 2019) which states that Indonesia consists of 17,480 islands and is the largest archipelagic country in the world, with a coastline of 95,000 km and is the second longest in the world after Canada, where 2/3 of the country's territory is an ocean, known as a country with "mega

biodiversity." Therefore, it is not surprising that Indonesia can be considered the heart of the world's biodiversity, including its coastal and marine biodiversity.

Various opinions put forward his theory of the notion of externalities. The statement by Mukhlis (2019) states that externalities occur when the activities of one entity affect the welfare of another entity that occurs outside the market mechanism (a non-market mechanism). Unlike influences transmitted through the market price mechanism, externalities can affect economic efficiency. In this case, the externality is a consequence of a person's inability to make a property right, as stated by Klenow and Rodríguez-Clare (2005).

(Lutfitasari, 2021) introduced the idea that waste results from human activities that otherwise cannot be reused. Lack of human awareness makes much garbage thrown carelessly; there is a river on the streets and in the yard. It will cause pollution, rivers flood, smells everywhere, and the view will be disturbed.

This study contributes to the literature on coastal resource management's essential role in the Indonesian economy, especially for coastal communities that occupy almost 68% of Indonesia's territory in this region. Most of this population lives in poverty pockets directly related to the degradation of mangrove ecosystems, which makes coastal areas vulnerable to global climate change. Thus, an effort to manage coastal resources and empower their communities is needed to increase adaptation capacity, namely adaptation to climate change (Sadelie et al., 2012).

Based on the main contribution of Law Number 23 of 1997 concerning Environmental Management, the environment as a unit with all things space, power, circumstances, and living things, including humans, and behavior, which affects the survival of livelihoods and welfare of humans and other living things (Siahaan, 2004). Waste management in Indonesia has been regulated in Law Number 18 of 2008 and Government Regulation Number 81 of 2012 concerning waste management in Indonesia Tanan et al. (2021).

Therefore, this study intends that a state based on Islamic principles has a big goal, namely meeting the needs of everyone, fighting injustice between the government and community members, and realizing sustainable economic development. All of these goals must be achieved based on justice. The state has the right to regulate the government's budget and spending to achieve these goals (Hidayat & Surahman, 2017).

Negative externalities caused by garbage and public unrest due to unpleasant odors in the environment make people feel disturbed by the smell; it is difficult for people to get fresh air because it has been mixed with unpleasant odors from factory waste. The principles taught by Islam in the Qur'an Surah Al-A'raf verse 56 say that the damage that occurs on land and at sea is the result of human actions and strictly forbids Muslims from doing earth damage.

Islam includes two main things, physical (outward) and spiritual (inner) welfare, welfare in the world and the hereafter because humans live not only in the natural world but also

in the afterlife. Material sufficiency in the world is shown to obtain sufficiency in the future. If this ideal condition cannot be achieved, then welfare is prioritized hereafter because it is an eternal and valuable life compared to life in this world (Sohrah, 2014).

According to Pigou in Dzaki and Sugiri (2015), the externality is what if one economic actor affects the utility function (level of satisfaction) or the production function of the other party but without being accompanied by a compensation mechanism to replace the resulting consequences. Pigou said that the condition for externalities is the influence of the producers' actions or consumers on other parties and the absence of compensation for the effects it causes.

Fisher in Mukhlis (2019) says that externalities occur when one activity of economic actors (both production and consumption) affects the welfare of other economic actors and events outside the market mechanism. According to Fisher, this definition of externality shows that externalities arise not only from the producer side but also burden consumers. These externalities can arise from the consumers or the public, often the recipients of externalities. Thus, externalities can arise from consumers burdening producers, and other consumers can also occur from producers burdening consumers and other producers.

Based on the explanation above, a problem formulation can be taken as a discussion in writing scientific papers. Namely, how the form and influence of negative externalities generated from waste in the Lampung Bay Coast, what impacts are felt by residents related to the negative externalities of waste in the Lampung Bay Coast, and whether there are ways to reduce or avoid the negative externalities that result from debris in the Lampung Bay Coast.

We aim that readers can study and draw conclusions about the form of negative externalities generated from waste on the Lampung Bay Coast for the community. It provides knowledge about what impacts residents feel as a result of negative externalities of waste on the Lampung Bay Coast and includes advice on how to reduce or avoid the negative externality impacts generated from waste in the Lampung Bay Coast.

Research Method

The research method used in the current study is field research. Field research is conducted directly in the field (Nurdiani, 2014). Researchers immediately went to the area to interview residents directly affected in Lampung Bay. Based on its nature, this research is qualitative. Qualitative research emphasizes quality, the most important thing, from the nature of goods/services. Qualitative research methods intend to understand the phenomena experienced by research subjects, such as actions, perceptions, actions, and so on, holistically and are described in the form of words and language and are natural by utilizing various natural methods.

The population in qualitative research uses the term "social simulation" or a social situation consisting of three elements: place, actor, and activity that interact synergistically, not only elements, even vehicles (Afriyeni, 2018). If every human provides data, then the size or number of the population will be the same as the number of humans. The population in our study is the people who live in the Bay of Bandar Lampung.

Sampling is a systematic method for selecting subjects to be studied Suparmi (2014). According to Sulistyono et al. (2018), the following are describing some general terms that need to be understood in sampling, including:

- a. The unit of observation (unit of analysis) is the basic unit used as the object of observation in research.
- b. The population is a complete and intact set of observation units consisting of values or measures of multiple variables.
- c. The sample is a set of observation units (part of the population) that provides information or data for a study, consisting of values or sizes of variables that are limited in number. Samples are needed if the research population size is relatively large.
- d. A representative sample is the set of observation units considered sufficient to represent specific characteristics of the population.

So that the sample used in our study is the entire population, namely the community consisting of 4 (four) Bay areas in Bandar Lampung, amounting to 170.414 people. The purpose of sampling is to obtain a descriptive picture (Maidiana, 2021) of the characteristics of the observation units included in the sample and to generalize and estimate population parameters. It was done because the researcher could not make direct observations on all branches of analysis or individuals in the research population. Researchers take data from a part of the population called the sample to represent the population. In choosing the sampling method to be used, it is necessary to consider the research budget, the time limit of the study, the availability of knowledge about the population, information on population size, accessibility to the unit of observation, the level of generalization to be achieved, and the availability of supporting facilities. Resmawati et al. (2013) argue that a combination of several sampling methods is very commonly used in a study to achieve research objectives and provide quality, accurate results, and reliable results.

The sample in this study was obtained using a random sampling method, namely the random sample method Arieska and Herdiani (2018). There are several instruments in data collection techniques in this study, namely as follows:

1) Observation

This method is used to observe the symptoms at the research location and systematically record the phenomena found.

2) Interview

Interviews are one of the instruments used to dig up data verbally (Herlinda et al., 2021). Data collection is in direct communication with respondents who can represent data collection. The respondents in this study were traders and some residents in Lampung Bay.

3) Documentation

Document analysis is more directed to concrete evidence. In this study, documentation analysis is used to obtain data from written and unwritten documents that are following research needs and complements to find more objective and concrete data Nathalia et al. (2015).

Result and Discussion

Origin of Lampung Bay Coastal Garbage

Lampung Bay is a bay in the waters of the Sunda Strait, south of Lampung. In this bay, two rivers flow into the city of Bandar Lampung. This bay is between Bandar Lampung City, South Lampung Regency, and Pesawaran Regency. Long Harbor is also in this bay. Pasaran Island, Sebesi Island, Sebuku Island, Legundi Island, Kelagian Island, Condong Laut Island, Tangkil Island, Tegal Island and other small islands are a group of islands located in Lampung Bay.

According to data from the Lampung Environment Service, around 57 thousand tons of garbage enter Lampung waters annually. Of this amount, approximately 19 thousand tons are on the coast of Lampung Bay. As for the trash going to the sea around Bandar Lampung City, more than 8,000 tons per year. The accumulation of garbage on the coast of Bandar Lampung cannot be separated from the contribution of waste that has not been processed on land. According to the Director of the Lampung Forum for the Environment [Walhi], Irfan Tri Musri, the garbage on the coast, apart from community activities, is also contributed by dumped consignments in the upstream river which eventually ends up in the sea. "Because the coastal characteristics of Bandar Lampung are waters that protrude into the mainland, so, at certain times, garbage will accumulate on the coast," he said, Saturday, [28/11/2020].



Irfan said that the waste management carried out by the Lampung City Government has not yet been completed. "It must be done seriously, thoroughly. There are very few temporary waste disposal sites [TPS] and waste management facilities on the coast," he said.

The Head of Waste and Hazardous Waste Management at the Lampung Provincial Environment Agency, Muhammad Budi Setiawan, admitted that the lack of staff and a landfill [TPA] is an obstacle in managing waste. "It cannot be separated from the role of the community when speaking of the waste problem, although in practice, the lack of officers is part of the obstacle in waste management," he explained Friday (11/27/2020). According to him, the increasing number of people in Bandar Lampung is not proportional to the officers' ability in waste management. "Bakung TPA as the only final waste management in Lampung, its capacity is already at the threshold."

The externality is the impact or influence arising from activity on another person or a group of people without any compensation whatsoever, resulting in inefficiency in the allocation of factors of production. A negative externality in action will cause inefficiency, which is also detrimental—for example, consumers who use plastic as an essential item in supporting their consumption activities. Plastic is used as a container for various purchased goods, and its role is still not completely replaced until now.

Plastic is an environmental problem often discussed; lately, plastic waste is destroying marine life and the surrounding environment. Therefore, the use of plastic needs special attention from the public and the government. It is very concerning because Indonesia is a maritime country where many of the population make a living as fishermen. If the sea used as a place to try their luck turns into a sea of garbage, fishermen will find it challenging to catch fish. Plastic will pool in the water and be carried away by fishing nets.

This plastic waste pollution also affects the beach tourism industry, which depends on the beautiful scenery that tourists want. The underwater beauty and the beauty of other scenery on the beach attract tourists to visit this tourist spot. If the beach is filled with plastic waste, the interest of tourists visiting will also decrease. This reduction in the number of tourists will cause the livelihoods of residents around the coast to be lost, and they will find it challenging to meet their daily needs. Finally, the welfare of the population will also decline.

Impact on Local Related to Negative Externalities of Gargabe in Lampung Bay

According to (Nugraha, 2020), the head of the Sukaraja Fishermen's Group, fishermen's catches were quite good before there was trash. "Now, because of the accumulated garbage, it causes less fish,". Another impact is that fishermen often find it difficult to catch fish due to the accumulation of garbage. "Everything is mixed, and there are plastic, wood, nails, bottles, and glass.



Another threat faced by the people on the coast of Bandar Lampung, apart from garbage, is tidal flooding, aka rising sea levels Wibisono (2019). Halimah, a resident whose house directly faces the sea, said the house could inundate when the tide is high.

According to Diky Hidayat, Lecturer of Environmental Chemistry at the University of Lampung [Unila], in the 1980s, the coast of Bandar Lampung was not polluted. Marine ecosystems are still awake. "I was born in the Panjang area; there used to be seaweed meadows. The sea water is clear, and the rocks are still there. There are still many fish species, as well as shrimp and squid," he said Monday (11/30/2020).

According to Diky, the pollution on the coast of Bandar Lampung cannot be separated from the impact of reclamation activities. The implementation location is in Bumi Waras Village, covering an area of 117 hectares. This village has become a reclamation location because the beach is quite broad, and the site is quite strategic; there are many shops, warehousing, and industries.

The impact of reclamation causes various problems. One is due to the accumulation of garbage from industrial activities and people who throw rubbish into the sea Siregar (2014). "If this is allowed, in the not too distant future, maybe the sea in Lampung Bay can no longer be used," he said.

Study of the Impact of Negative Externalities on Garbage in Teluk Lampung for the Community From an Islamic Perspective

A negative externality is a negative impact caused by an activity on a third party in which the third party has nothing to do with the action. So, a negative externality is a negative thing that the community feels because of an activity that causes a problem / negative thing in the community's life. According to the word of God in the letter Al-A'raf, verse 56 reads:

وَلَا تُفْسِدُوا فِي الْأَرْضِ بَعْدَ إِصْلَاحِهَا وَادْعُوهُ خَوْفًا وَطَمَعًا إِنَّ رَحْمَتَ اللَّهِ قَرِيبٌ مِّنَ الْمُحْسِنِينَ ٥٦

"And do not do mischief in the earth, after (Allah) has repaired it and pray to Him with fear (will not be accepted) and hope (will be granted). Verily, the mercy of Allah is near to those who do good."

Where the verse above clearly explains that humans have become caliphs on Allah's earth, and it is fitting for humans to make Allah's world a place of worship and seek sustenance without destroying what already exists. Negative externalities generated by human activities are a form of environmental damage. Therefore, it is essential to follow up in the form of responsibilities that are carried out after the emergence of negative externalities, and it is important to avoid activities that later have the potential to damage God's earth. Then Allah says in QS Al-Baqarah verse 30:

وَإِذْ قَالَ رَبُّكَ لِلْمَلَائِكَةِ إِنِّي جَاعِلٌ فِي الْأَرْضِ خَلِيفَةً قَالُوا أَتَجْعَلُ فِيهَا مَن يُفْسِدُ فِيهَا وَيَسْفِكُ الدِّمَاءَ وَنَحْنُ نُسَبِّحُ بِحَمْدِكَ وَنُقَدِّسُ لَكَ قَالَ إِنِّي أَعْلَمُ مَا لَا تَعْلَمُونَ ۝ ٣٠

"Remember when your Lord said to the angels: "Indeed I want to make a caliph on earth." They said: "Why do you want to make (the caliph) on earth a person who will make mischief on it and shed blood, even though we always glorify you by praising and purifying you?" God says: "Verily, I know what you do not know."

The meaning of the above verse is that Allah always knows what human activities are on earth. And as a person who has been delegated the responsibility as a caliph of Allah's world, humans should not carry out activities that are in vain and destructive to the environment. Humans have been permitted to seek worship and sustenance, and humans are forbidden to destroy Allah's earth. So people should be wise in carrying out activities that do not cause negative externalities for the environment and society.

Conclusion

The impact of negative coastal externalities in Lampung Bay has resulted in waste that pollutes the marine environment around the coast of Lampung Bay. Although it is not visible to the naked eye, residents feel negative impacts that have become serious problems that have not yet been entirely handled. This article aims to research, study and produce decisions regarding externalities felt by the surrounding community regarding the impact of negative externalities generated from waste, which is the source of all environmental problems in Lampung Bay. Garbage is produced from a production process that will inevitably have negative externalities. The testimonies of residents, several magazines, and direct observations led this article to the conclusion that it is crucial to conduct a particular study to decide which negative externality impact is more dominant regarding the causes of continued accumulation of waste from year to year as well as the factors and implications of problems related to waste in Lampung Bay.

Based on the results of this study, the theoretical and practical implications can be stated as follows: (1) Negative externalities can affect the environment, and pollution is described as a polluting activity that can reduce value and use. Environmental pollution is

an unfavorable ecological change partly due to human actions. (2) The results of this study are used as input for all humans or society to pay more attention to the negative impacts of human activities on the environment.

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