

Waste Management in Islamic Studies for Sustainable Environmental Preservation

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Abstract: The world is experiencing an environmental crisis. Because of the lack of understanding of the community and government, the waste problem is neglected. Today most people know the adverse effects of garbage, including causing floods, diseases, and odors that can interfere with life, but the community's behavior does not balance this. Meanwhile, Islam teaches about cleanliness and environmental preservation. Environment and religion are often understood separately. The purpose of this study is to study waste management in Islamic studies for sustainable environmental preservation. The research was analyzed by a qualitative method. The data obtained are the theory and the results of previous studies. The 3R: Reduce, Reuse, and Recycle is a popular waste management model. Waste management is in line with Islam. In Islamic studies, the earth and its contents belong to Allah. Management and preservation have been written in the Qur'an. Humans should protect the environment, one of which is by implementing 3R in waste management. To achieve a sustainable environment, increasing waste management efficiency, restructuring policies to encourage efficiency in the recycling industry, and promoting environmentally friendly technologies are required.

Keywords: Waste Management, Sustainable, Islamic Studies

1. Introduction

Trash is a problem facing the global community. National Geographic reports each of the world's cities produces at least 1.3 billion tons of waste each year. The World Bank estimates that by 2025, this number will increase to 2.2 billion tons [1]. Indonesia is ranked second in the world in contributing plastic waste to the sea after China, followed by the Philippines, Vietnam, and Sri Lanka [2].

COVID-19 is making things worse on earth. COVID-19 impacted some sectors: decrease in economic activities, decrease in food access, overloaded health facilities, decrease in education quality, more vulnerability to women, increased unemployment, increased inequalities, and increased conflict likelihood [3]. Garbage is one of the main problems affecting a civilization's progress. Asia produces a

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lot of plastic waste [4]. Countries in the Asia Pacific, including Indonesia, need solutions to environmental problems. Environmental quality in recipient ecosystems in Indonesia requires better predictive and management tools [7].

Waste management cannot be separated from the direction of people's lifestyles. The increase in population and lifestyle dramatically affects the volume of waste. Garbage is dumped by the community into rivers, ditches, vacant land, on the roadside, or in any place. Many people do not think about the impact of littering. Society's actions can cause floods caused by clogged drains in ditches and rivers with garbage. In addition, piles of waste can cause air pollution caused by unpleasant odors or unpleasant odors. Even the beauty of the environment can be disturbed due to heaps of garbage and can become a place to live for pests and diseases that endanger human life, such as rats, flies, and microorganisms that cause human disease [5].

One of the popular waste managements is Construction and Demolition Waste (C&DW). Although C&DW is well developed worldwide, the output is far from optimum. One of the main reasons is a lack of understanding of the principal factor [6]. Waste must be appropriately managed to avoid environmental pollution. Sustainable development is hard to achieve without formulation and utilization of management potential [8].

Environment and religion are often understood separately. Yet faith and the environment are closely related. Religion teaches people to know and realize the importance of protecting the environment [9]. The purpose of this study is to study waste management in Islamic studies for sustainable environmental preservation.

2. Materials and Methods

2.1 Waste

Referring to the definition of waste from the National Standard, Waste is solid waste consisting of inorganic and organic materials considered useless. Usually, people with lower-middle incomes produce organic waste. Meanwhile, middle, and upper-income people produce glasses, metals, and peppers [10]. Table 1 shows the composition of urban waste by type.

Table 1: Composition of Urban Waste by Type

Type	Waste
Kitchen waste	Food waste, agro-food residues
Yard waste	Grass, leaves, twigs
Cardboard and paper	Magazines, books, copy paper
Rubber and plastic	High and low-density polyethylene, polypropylene, polycarbonate
Metal	Cans, wires, lids
Glass	Food containers, utensils, glass bottles
Electronic waste	Electronic devices, dead batteries
Miscellaneous	Biomedical waste, rags, pharmaceuticals
Inert materials	Stones, dust, silt

Garbage comes from several sources. 1) Garbage coming from the settlement. This waste consists of solid materials because of household activities that have been used and discarded, such as food waste, paper/plastic food wrapping, leaves, and others. 2) Garbage comes from public places such as markets, entertainment venues, bus terminals, and train stations. The trash is in the form of paper, plastic, bottles, and leaves. 3) Garbage coming from the office. Generally, this garbage is dry and flammable. 4) Garbage coming from the highway. Typically, paper, cardboard, dust, rocks, sand, leaves, and plastics. 5) Garbage coming from the industry. This industrial process wastes such as packing waste goods,

metals, plastics, wood, cans, and so on. 6) Garbage that comes from agriculture or plantations. This garbage is because of plantations or agriculture, such as straw, vegetable waste, etc. 7) Garbage from farms and fisheries.

In healthcare, waste consists of chemical waste, sharps waste, infectious waste, pathological waste, pharmaceutical waste, radioactive waste, non-hazardous healthcare waste, and other waste [11]. Environmental and health issues caused by open dumping and burning may affect some sectors: informal recycling, marine litter, disease vector and spread of infectious pathologies, global warming, and water, soil, and air pollution. Open dumping and burning occur because demolition and construction waste used tires, healthcare waste, municipal solid waste, waste of electronic equipment, used batteries, and other hazardous waste [12].

2.1 Waste Management

Concepts of the waste sector in a green economy are reuse, recycling, and recovery [13]. 10Rs concept is refuse, reject, rethink, reduce, reuse, repair, refurbish, remanufacture, repurpose, and recycle. Refusing and rejecting means people must choose to buy something they really need. Rethink: means multifunctional products such as sharing products and refiling pot than plastics. Reduce the amount of material in the product. Reuse: reuse by the same function as discarded products. Repair: maintain or restore broken products. Refurbish up-cycling old products. Remanufacture: utilize part of discarded products. Repurpose: with a similar function, using discarded products. Recycling is a process of materials of low or high quality. Recover: with energy recovery, incineration of material [14].

Waste management during COVID-19 in healthcare starts with waste classification, segregation to the final disposal. In healthcare, solid waste management systems use temporary waste transit and treatment centers [13]. Waste management during a pandemic consists of eight priorities: clear awareness and communications, safe healthcare disposal, ensuring waste collection continuation, safety for both informal and formal workers, providing workers financial security, developing disposal facilities, understanding waste dynamics, and integrating waste pickers. Solid waste management processes during a pandemic are waste generation, sorting and storage, collection, and treatment. In a waste generation in a household, the garbage should not be mixed—used biodegradable waste. For treatment, waste management can be done by composting, anaerobic digestion, recycling plant, and secured landfill [15]. The plastic waste implication of COVID19 is food packaging waste, personal, proactive equipment, medical packaging waste, and single-use plastic bags. Social institutional and individual behavior must occur simultaneously and gradually to achieve waste management. Personal behavioral changes are source segregation. It encourages ecofriendly alternatives, knowledge about the effect of using plastic, reduces littering, pushes governments for institutional changes, reduces organic contamination, changes perceptions of plastics as hygienic, and reduces waste generation [16].

In China, informal recycling focus on a trading point, the exchange of recyclables for money. Waste merchants or waste pickers carry out waste from households or public bins. Then, waste pickers and merchants collected the garbage at a trading point. Trading points deliver the trash to intermediaries' storage yards. Manufacturing and informal or formal recycling got the garbage from mediators' storage yards [12].

2.5 Islamic Studies

Science is classified into two, natural sciences and social sciences and humanities. Islamic studies are one of the humanities disciplines. Islamic studies revolve around interpretation, hadith, Fiqh, and tasawuf. Islamic studies cannot be separated from the development of intellectual qualities. When Islam is seen from a normative point of view, then Islam is a religion that contains the teachings of God. While Islam is seen from a sociological or historical point of view, Islam is a scientific discipline. So Islamic studies are an attempt to study and systematically matters related to Islam, including the daily practice of daily life [17]. Islam covers all aspects of life, including social, economic, intellectual, spiritual, and scientific life [18].

2.5 Sustainable Development

Traditional innovations focus on associated and economic dimensions. Meanwhile, sustainable innovations balance environmental, social, and economic [19]. Industry 4.0 and circular economy are pivotal to reaching sustainable development [20]. Sustainable development covers three sectors: ecology, economy, and society. Ecology is the protection and management of natural ecosystems and resources and the emission prevention of harmful waste and gases. The economy is defined as investment and revenue, mainly research and development. Society means ensuring human rights, equality, healthcare, education, and all standards of life quality. Ecological-economic scope, archivable, means efficient use of energy, resource, and environmental incentives. Socio-economic scope, fair, means education, employment, and development of labor rights and equality. Ecological-social scope, acceptable, means the quality of safety, health, equality of laws, human rights, and public opinion [21].

Sustainable development in tourism consists of 3 components: social, ecological, and economic [22]. Points of three bottom lines: the economic, environmental, and social. The economic bottom line is how and what long-term sustainable indicators might be added. The environmental bottom line is to determine how natural capital can be accounted for and quantified. The social bottom line means businesses cannot avoid globalization gathering steam [23].

2.4 Methods

This study uses a literature review procedure. First, determining the study goal and delimitations. Second consists of 5 steps: keyword definitions, database definitions, search and collection documents, portfolio screening, and description of the final portfolio. Third, using descriptive analysis on the final portfolio. Fourth, analyzing content regarding the research questions, then categorizing selection and finalizing compilation. Based on those steps, the study gets the result [24].

3. Results and Discussion

An environment is a place for living creatures on earth, including humans. The environment affects the degree of health, so protecting the environment is the community's responsibility. The most effective tools to solve the waste problems are to enhance reducing, reusing, and recycling behaviors [25]. Based on the EU waste hierarchy, the main composition of CDW is preparing for reuse, recycling, recovery, and disposal. The waste hierarchy includes reduction, reuse, recycling, energy recovery, incineration, and landfill [26]. Reducing involves innovative ways to replace the usage of non-renewable raw materials. Reuse means extending the product's useful life as long as possible. Recycling involves reusing and recovering resource output to make a new product [27].

Good waste management is in line with Islam. Waste management consists of storage, collection, processing, and disposal of the present. Hadith about cleanliness states that environmental management

behavior aligns with faith [28]. Islam was revealed as a religion of Rahmatan Lil Alamin, a religion of mercy for humans and the entire universe [29]. Humans have a role in protecting the earth as a medium for realizing the welfare of living creatures by paying attention to aspects of the balance of nature [23]. The Qur'an is a source of Islam concerned with environmental problems [30]. Preservation in Islam is stated in the Qur'an and hadith [31]. Several Surahs, Al-Ahzab 33:72, Al-A'raf 7:56, An-Nur 24:41, and Ar-Rum 30:41, explain the environments. Moreover, humans as the holder of the trust in preserving the environment. In Surah Al-Ahzab 33:72, humans dominate the environment and can be the cause of ecological balance [5].

إِنَّا عَرَضْنَا الْأَمَانَةَ عَلَى السَّمَاوَاتِ وَالْأَرْضِ وَالْجِبَالِ فَأَبَيْنَ أَنْ يَحْمِلْنَهَا وَأَشْفَقْنَ مِنْهَا
وَحَمَلَهَا الْإِنْسَانُ إِنَّهُ كَانَ ظَلُومًا جَهُولًا

“Indeed, We offered the trust to the heavens and the earth and the mountains, but they ‘all’ declined to bear it, being fearful of it. But humanity assumed it, ‘for’ they are truly wrongful ‘to themselves’ and ignorant ‘of the consequences’,” (AlAhzab 33:72)

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

“Do not spread corruption in the land after it has been set in order. And call upon Him with hope and fear. Indeed, Allah’s mercy is always close to the good-doers.” (Al-A’raf 7:56)

أَلَمْ تَرَ أَنَّ اللَّهَ يُسَبِّحُ لَهُ مَن فِي السَّمَاوَاتِ وَالْأَرْضِ وَالطَّيْرُ صَفَّاتٍ كُلٌّ قَدْ عَلِمَ
صَلَاتَهُ وَتَسْبِيحَهُ وَاللَّهُ عَلِيمٌ بِمَا يَفْعَلُونَ

“Do you not see that Allah is glorified by all those in the heavens and the earth, even the birds as they soar? Each ‘instinctively’ knows their manner of prayer and glorification. And Allah has ‘perfect’ knowledge of all they do” (An-Nur 24:41)

ظَهَرَ الْفَسَادُ فِي الْبَرِّ وَالْبَحْرِ بِمَا كَسَبَتْ أَيْدِي النَّاسِ لِيُذِيقَهُمْ بَعْضَ الَّذِي عَمِلُوا لَعَلَّهُمْ
يَرْجِعُونَ

“Corruption has spread on land and sea as a result of what people’s hands have done, so that Allah may cause them to taste ‘the consequences of’ some of their deeds and perhaps they might return ‘to the Right Path’.” (Ar-Rum 30:41)

وَإِلَى ثَمُودَ أَخَاهُمْ صَالِحًا قَالَ يَا قَوْمِ اعْبُدُوا اللَّهَ مَا لَكُمْ مِنْ إِلَهٍ غَيْرُهُ هُوَ أَنْشَأَكُمْ مِنَ
الْأَرْضِ وَأَسْتَعْمَرَكُمْ فِيهَا فَاسْتَغْفِرُوا لَهُ ثُمَّ تَوْبُوا إِلَيْهِ إِنَّ رَبِّي قَرِيبٌ مُّجِيبٌ

And to the people of Thamūd We sent their brother Ṣāliḥ. He said, “O my people! Worship Allah. You have no god other than Him. He ‘is the One Who’ produced you from the earth and settled you on it. So seek His forgiveness and turn to Him in repentance. Surely my Lord is Ever Near, All-Responsive ‘to prayers’.” (Hud 11:61)

Several surahs on the environment explain that the earth and its contents belong to Allah. Allah forbids actions that can damage the land and the preservation of nature. Damage can harm Allah's creatures. Humans are caliphs to protect and prosper souls. Therefore, Humans should be pious to Allah and preserve the environment.

On the other hand, preparing and recycling for reuse were considered positive in a circular economy [32]. The backbone of society is formed by infrastructure systems providing essential services,

including water, energy, transport, waste management, and telecommunications [33]. Waste management significantly increases profitability [34]. Furthermore, life in society cannot be separated from the use of technology. The existence of technology affects the surrounding environment [35]. Information and communication technology (ICT) has a significant role in environmental preservation [36].

The cleaner a place is from garbage, the more civilized the people living there are. In developed countries, people should be aware and not act to litter. If thrown into the environment irregularly, a large amount of waste will cause a buildup of garbage and become a big problem. The role of the community is crucial in protecting the environment because the community is required to be able to solve problems related to the environment. In addition, the role of local governments is needed to support the success of having a clean community and managing garbage properly. As supporters, cooperation is required from all parties, the community, government, and third parties. To achieve a sustainable environment, increasing waste management efficiency, restructuring policies to encourage efficiency in the recycling industry, and promoting environmentally friendly technologies are required [16]. The sustainable model integrates governance at the top and puts humans at the center [37].

4. Conclusion

Garbage should get serious attention and handling. Litter is made worse by the presence of COVID-19 creating new waste in the health sector. Based on the data, Indonesia is one of the world's most significant contributors to waste. Even though Indonesia has a Muslim majority population, the waste problem is still not entirely resolved. Meanwhile, Islam teaches about cleanliness and environmental preservation. Waste management needs to be given more attention. A popular waste management model is the 3Rs: Reduce, Reuse, and Recycle. Reducing involves innovative ways to replace the usage of non-renewable raw materials. Reuse means extending the product's useful life as long as possible. Recycling consists in reusing and recovering resource output to make a new product.

In Islamic studies, the earth and its contents belong to Allah. Management and preservation have been written in the Qur'an. Humans should protect the environment, one of which is by implementing 3R in waste management. The role of the community is vital in protecting the environment because the community is required to be able to solve problems related to the environment. As supporters, cooperation is needed from all parties, the community, government, and third parties. To achieve a sustainable environment, it is necessary to increase waste management efficiency, restructure policies to encourage efficiency in the recycling industry, and promote environmentally friendly technologies.

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