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RESEARCH ARTICLE

ISLAM AND GREEN TECHNOLOGY

Mohamad Zaidin Mohamad¹, Noorsafuan Che Noh¹, Mohd Faiz Hakimi Mat Idris², Ahmad Fauzi Hasan², Sofyuddin Yusof² and Berhanuddin Abdullah²

1. Research Institute for Islamic Products & Civilization (INSPIRE), Universiti Sultan Zainal Abidin, Gong Badak Campus, 21300 Kuala Nerus, Terengganu.
2. Faculty of Islamic Contemporary Studies, Universiti Sultan Zainal Abidin, Gong Badak Campus, 21300 Kuala Nerus, Terengganu.

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Abstract

Islam is a religion that emphasizes the importance of protecting the environment and preserving the earth's natural resources. With the rise of global warming and climate change, the need for green technology has become more pressing than ever before. This study aims to identify the Islamic perspective and implementation of such programs in Islamic history, especially during the era of Andalusia. This study is a qualitative approach with a research design of document analysis. The study's findings show some of the green technologies that are compatible with Islamic principles, such as renewable energy sources and sustainable agriculture. Finally, the article concludes by highlighting the need for a holistic approach to environmental protection that integrates both Islamic teachings and modern green technologies.

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Introduction:-

Green technology is a technology that is developed to meet human needs and can operate more efficiently while having a smaller environmental impact. In Islam, the natural environment is a gift from Allah SWT that must be protected and preserved to maintain the sustainability of human life and other creatures. Therefore, the Islamic view of green technology is very positive because it can help to protect the environment.

The Islamic view of green technology can be found in various verses of the Quran and hadith, such as in Surah al-Baqarah verse 60 and Surah al-Rum verse 41. In these verses, Allah SWT emphasizes that humans as stewards on earth have a responsibility to protect and preserve the environment so that it does not become damaged and deteriorated. "Eat and drink from the provision of Allah, and do not cause corruption and destruction on the earth." (al-Baqarah: 60)

"Various damages and calamities have arisen on land and sea because of what human hands have done; (these have arisen) because Allah wants to make them taste some of the consequences of the evil deeds they have done, so that they may return (to Him in repentance and awareness)." (al-Rum: 41)

"Furthermore, in a hadith, the Prophet Muhammad (SAW) said..."

Corresponding Author:- Mohamad Zaidin Mohamad

Address:- Research Institute for Islamic Products & Civilization (INSPIRE), Universiti Sultan Zainal Abidin, Gong Badak Campus, 21300 Kuala Nerus, Terengganu.

“Indeed, Allah ‘AzzaWa Jal loves it when one of you performs an action, that it is done diligently.” (al-Tabarani, 1995)

The use of green technology can also be a form of perpetual charity, which is a good deed that continues to benefit others even after the doer has passed away. In Islam, perpetual charity is highly recommended and regarded as an investment for the afterlife (Harfiyah Abdel Haleem. 1999; Norizan et al., 2016).

In summary, Islam strongly encourages the use of green technology as an effort to protect and preserve the environment, which is a gift from Allah SWT.

Moreover, Islam also pays attention to the ethics of using green technology. Green technology must be used wisely and not harm the environment or human health. This is in line with Islamic principles that teach simplicity, orderliness, and justice in the use of natural resources.

In Islam, green technology can be used to support da’wah activities and the welfare of humanity. For example, the use of green technology in waste processing can help maintain environmental cleanliness, thus becoming a form of rewarding charity.

However, Islam also emphasizes that green technology should not be made the primary goal, but only a means to achieve a greater goal, which is to preserve the environment and the welfare of humanity.

To promote green technology, Islam also encourages the development of innovation and research in the field of green technology. In this regard, Islam teaches that science and technology must be applied wisely and responsibly, to provide greater benefits to human life and the environment (Sayem, 2021; Aburounia, Sexton, 2006; Ashtankar, 2016).

Principles of Islam in Green Technology:-

The principles of Islam for green technology can be explained as follows:

1. Justice in the use of natural resources. Islam teaches that humans should treat natural resources fairly and wisely. Natural resources provided by Allah SWT to humans must be used responsibly and not harm the environment. This is in line with the concept of sustainable development that prioritizes social, economic, and environmental justice (Muhammad A. S. & RijaSudirja, 2007).
2. Simplicity and orderliness. Islam teaches that humans should live simply and not excessively use natural resources. This can be done by reducing the use of energy and chemicals that are harmful to the environment and human health. In addition, Islam also emphasizes the importance of orderliness in the management of natural resources to maintain ecosystem balance (Muhammad S.A. et al, 2021).
3. Obligation to protect the environment. Islam teaches that humans, as stewards on earth, have a duty to protect and preserve the environment. This is in line with the principles of Islamic environmental ethics that respect the existence of other living beings and encourage humans to maintain the cleanliness and beauty of nature (Wardah, 2022).
4. Development of innovation and research. Islam encourages the development of innovation and research in the field of green technology to produce more effective and efficient solutions in protecting the environment. This is in line with the principles of science and technology in Islam, which prioritize the wise and responsible application of science and technology (Mehran, 2011).

Rasulullah SAW and Green Technology:-

There are no specific historical records mentioning that Rasulullah SAW directly practiced green technology. However, the environmental principles and the use of natural resources described in the Quran and Hadith provide guidelines for Muslims to develop green technology in their daily lives.

For example, in the Hadith narrated by Abu Dawud, it is mentioned that Prophet Muhammad taught his followers to pay attention to environmental cleanliness and health by disposing of waste properly. In addition, the Quran also explains the importance of maintaining ecosystem balance and the sustainability of living creatures on earth.

In Islamic history, there were several figures who practiced environmental principles and the use of natural resources that aligned with green technology. For example, Caliph Umar bin Khattab, who was known for his attention to environmental cleanliness and improving the irrigation system in Medina.

In the modern context, Muslims can develop green technology by utilizing available science and technology. This is in line with Islamic principles that encourage innovation and research in the field of green technology to preserve the environment and benefit humanity (Arthur, 2012).

Green Technology in the Andalusia Era:-

In its heyday, the Islamic government in Andalusia practiced several green technologies aimed at developing more efficient agriculture and water management. For example, a sophisticated and integrated irrigation system known as “aljibes,” which was a network of canals and reservoirs that collected, filtered, and distributed water throughout the Andalusia region.

In addition, green technology in the field of architecture was also known in Andalusia, which used building design to reduce energy use and maximize natural air circulation. For example, buildings in Alhambra used a temperature regulation technique called “air conditioning” to maintain cool air temperature inside the building.

Moreover, the Islamic government in Andalusia also developed sustainable agricultural practices, such as terracing systems to reduce soil erosion and maximize water usage, as well as using organic fertilizers and compost to increase soil fertility.

However, green technology in Andalusia was not only applied by the government but also by the public. For example, the use of solar energy using concentrative mirrors (solar concentrators) used to heat water and generate steam in the textile and ceramic industries.

Green technology in the era of Andalusia shows that the Islamic government in the past has practiced environmental principles and the use of sustainable and efficient natural resources. This indicates that these principles are not only relevant to the present but have also been applied since the past (Ruggles, 2008; Glick, 1992).

In addition to green technology in agriculture and architecture, the Islamic government in Andalusia also applied green technology in the energy field. One of the most famous green technologies in the era of Andalusia was the “Almaden Tower” located in Toledo. This tower was used to generate electricity through wind power, where wind turbines on top of the tower produced electricity used to power machines.

Moreover, the Islamic government in Andalusia also utilized other natural energy sources such as waterfalls and rivers to generate electricity through water turbines. The application of green technology in the era of Andalusia was also done in the field of waste processing, where the government built an integrated waste processing system using composting and aerobic composting methods to produce organic fertilizers.

In conclusion, the Islamic government in Andalusia practiced green technology in various fields, from agriculture, architecture, energy, to waste management. This green technology was implemented as part of sustainable and efficient environmental principles, which showed that thinking and acting to protect the environment has been an important concern in Islamic society for a long time (Caesarina& Aina, 2018; Hoffmann, 2014; Safran, 2021).

The Islamic World Today and Green Technology:-

Several examples of Islamic countries that are serious about implementing green technology include:

1. United Arab Emirates (UAE): The UAE is one of the most active countries in the Middle East in developing green technology. They have built various green infrastructure, such as city parks and green lungs. In addition, they are also active in developing renewable energy technologies such as solar and wind energy and reducing the use of fossil fuels.
2. Indonesia: The Indonesian government has also taken steps to support green technology. Some policies implemented include the development of biofuels and the promotion of renewable energy technologies such as solar and wind power. The government also provides incentives to reduce the use of single-use plastics.
3. Malaysia: The Malaysian government has taken steps to support green technology by launching the “Green Technology Financing Scheme” program to promote investment in green technology. Additionally, the government is also promoting the development of electric cars and solar power plants.
4. Morocco: The Moroccan government has developed the “Morocco Solar Plan” program aimed at developing solar energy technology and reducing dependence on fossil fuels. They also developed the “Green Mosques” project to reduce the negative impact of mosques on the environment.

5. Saudi Arabia: Saudi Arabia has also begun taking steps to support green technology by launching the “Vision 2030” project aimed at reducing dependence on oil and developing renewable energy. In addition, they are building city parks and reducing the use of groundwater.

Of course, there are many other Islamic governments that also support the development of green technology. This shows that more and more countries are beginning to realize the importance of protecting the environment and taking action to reduce negative impacts on the environment.

Follow-up Steps in Empowering Green Technology:-

One of the steps that the Islamic world needs to take for technology to be more effective is to strengthen international cooperation. Here are some follow-up steps that the Islamic world can take to improve the effectiveness of green technology:

1. Strengthen international cooperation: By strengthening international cooperation, Islamic countries can share knowledge, experience, and technology in the development of green technology. This can help accelerate the development of green technology and improve its effectiveness.
2. Increase funding for green technology: Increased funding from Islamic countries can help in the development of green technology and accelerate its use. In addition, funding can be used to raise awareness and education about green technology in the community.
3. Enhance collaboration between public and private sectors: Collaboration between public and private sectors can help accelerate the development of green technology and improve its effectiveness. For example, governments can provide incentives to private companies that develop green technology.
4. Raise public awareness: Raising public awareness about the importance of green technology can help increase its use and reduce negative impacts on the environment. This can be done through social campaigns and education in various media.
5. Increase research and development: Research and development can help improve the effectiveness of green technology and find new innovations in green technology development. Islamic countries can increase research and development through funding and international cooperation (Alshehri& Hussain, 2021; Islam, 2020; The World Bank, 2018).

Conclusion:-

Islam encourages its followers to behave in an environmentally friendly manner and to preserve the earth. In Islamic teachings, the earth is a trust from Allah that must be protected and maintained to remain sustainable. Green technology is environmentally friendly technology aimed at reducing the negative impact of humans on the environment. Islam teaches that humans should use knowledge and technology for the benefit of humanity and the environment, and not to destroy nature. Islam and green technology are not conflicting but complement each other. Islam teaches people to use technology wisely and responsibly, so that green technology can be a means for Muslims to preserve the earth and achieve happiness in this world and the hereafter.

References:-

1. Aburounia, H., & Sexton, M. (2006). Islam and sustainable development. Research Institute for Built and Human Environment, University of Salford. Retrieved from <http://drhamida.com/hameda/uploads/29fe0106-e233-d49f.pdf>.
2. Alshehri, M., & Hussain, M. (2021). Islamic finance and green technology development: An empirical analysis. *Journal of Cleaner Production*, 294, 126289.
3. Arthur S. 2012. Muslims and ecology: fostering Islamic environmental ethics. *Contemporary Islam*. 6: 155-171.
4. Ashtankar, O.M. 2016. Islamic perspectives on environmental protection. *International Journal of Applied Research*, 2016; 2(1): 438-441.
5. Caesarina, H.M. and Aina, N. (2018). Planning and design approach in Islamic green city towards sustainable city: the case of Martapura. In ICEAT. IPO Publishing.
6. Glick, T.F. 1992. Hydraulic Technology in al-Andalus. In *The Legacy of Muslim Spain*. Nederland: Brill.
7. Harfiyah Abdel Haleem. 1999. *Islam and the Environment*. UK: Ta-Ha Publishers.
8. Hoffmann, R. (2014). *An environmental history of medieval Europe*. Cambridge University Press.
9. Islam, M.S. (2020). Islam and the environment: The framework of Islamic environmental ethics. *Religion*, 50(3), 319-336.
10. Mehran K. 2011. *Innovation In Islam: Traditions and Contributions*. Berkeley: University of California Press.

11. Muhammad A.S. & Rija Sudirja. 2007. Pengelolaan Sumberdaya Alam Secara Terpadu Untuk Memperkuat Perekonomian Lokal. *SoilREns*, 8(15): 782-793.
12. Muhammad S.A., Wina Y., Sari N.S., Siti N.Q., Rina R. 2021. Konservasi Sumber Daya Alam dalam Perspektif Islam. *Al-Mudaris*, 2(1): 26-37.
13. Norizan H., Hussin S., Hasimah A.R. 2016. Sumbangan Teknologi Hijau Dalam Ketamadunan Islam. *Sains Humanika*. 8(3-2): 29-37.
14. Ruggles, D. F. airchild. 2008. *Islamic Gardens and Landscapes*. USA: Univ. of Pennsylvania Press.
15. Safran, M. (2021). *Islamic Architecture In Andalusia Between The Past And The Present*. *Egyptology*, 18(4), 6493-6508.
16. Sayem, M.A. 2021. Islam and Environmental Ethics: A Qur'ānic Approach. *Islamic Studies*, 60(2): 157-172.
17. The World Bank. (2018). *Islamic finance and green infrastructure: Opportunities and challenges*. Washington, DC: The World Bank.
18. Wardah A. 2022. How About A Green Caliphate? *Global Islamic Environmental Governance for Devout Muslim Communities*. *AJIS*. 39(3-4): 6-56.