Bukhori: Kajian Ekonomi dan Keuangan Islam
ISSN 2798-6691, Vol 4, No 1, 2024, 47-58 https://doi.org/10.35912/bukhori.v4i1.3294

Green Waqf Model for Sustainable Waste Management: A Respond to the Economic and Environmental Development

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Riwayat Artikel
Diterima pada 22 Juli 2024
Revisi 1 pada 26 Juli 2024
Revisi 2 pada 22 Agustus 2024
Revisi 3 pada 28 Agustus 2024
Disetujui pada 5 September 2024

Abstract
Purpose: This study proposes a green waqf model for sustainable waste management.
Methodology/approach: This research is descriptive and qualitative, using secondary data from books and articles, with data collection through literature review and content analysis to organize and conclude the findings.
Results/findings: The proposed green waqf model involves five stages: First, the waqif transfers cash waqf to the waqf institution (nazir). Second, nazir would promote human capital development by using waqf funds to manage training centers equipped with waste management technology. Third, nazirs through training centers would provide skills development training programs to facilitate beneficiaries (mauquf officials) to improve their skills. Fourth, after receiving the necessary skills and training from the nazir, it is expected that the beneficiaries have jobs and boost their productivity output. Finally, monitoring and evaluation should be conducted to ensure continuous improvement. The proposed green waqf model supports economic growth and the Sustainable Development Goals by creating employment opportunities and reducing poverty. As one society benefits, others are motivated to adopt the model, which amplifies its positive impact at the grassroots level.
Limitations: This is literature-based research and has not yet been implemented; therefore, the detailed model needs to be further designed. The model's implementation may be hindered by varying regional infrastructure, the effectiveness of waqf institutions (nazirs), and potential cultural barriers.
Contribution: The proposed green waqf model is expected to enhance economic and environmental development.
Keywords: *Green waqf; Sustainable waste management; Economic development; Environmental development.*
How to cite: Hasan, N, F., Wigati, S. (2024). Green Waqf Model for Sustainable Waste Management: A Respond to the Economic and Environmental Development. *Bukhori: Kajian Ekonomi dan Keuangan Islam*, 4(1), 47-58.

1. Introduction

The rapid acceleration of industrialization has a significant impact on global waste production. Waste is one of the primary obstacles to the steady advancement of the economy and society. Worldwide trash production totals over 4 billion tons yearly (Vlaskin & Vladimirov, 2018). Unfortunately, the majority of them are discarded untreated, which has detrimental effects on both the environment and human health (Gupta & Nguyen, 2022). Indonesia generates up to 50,000 tonnes of waste every day, or more than 18 million tonnes per year (Figure 1). Of course, this reality has a negative impact on the Indonesian environment. It leads to depletion of natural resources, outbreaks of vector-borne diseases, air pollution and climate change. The domino effect also causes social and economic problems.

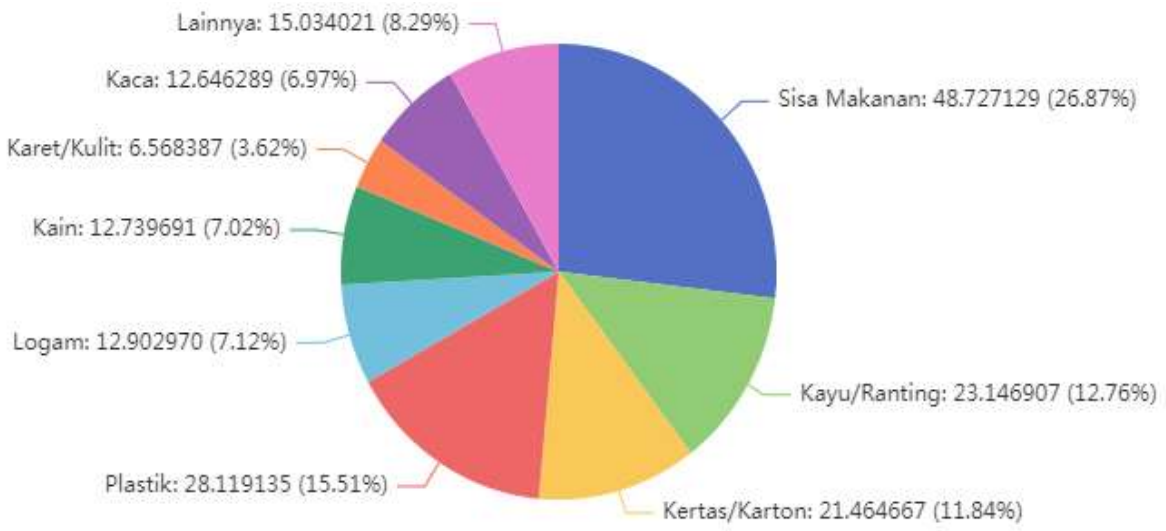

Figure 1. Waste Composition Based on Type (Directorate General of Waste and Hazardous Materials Management, 2022)

In the face of these environmental problems, waste management has become an economic approach that plays an important role in preserving the environment and improving living standards. Waste management can be integrated with power generation technology as a solution for waste management, chemicals and energy production. Among the available treatment options, carbonation technology, which can treat wet as well as solid waste, has recently become the most popular choice among researchers (Sharma et al., 2020). As a magic box, the waste thrown into the carbonization process becomes an energy source that converts the potential energy in the process into thermal energy. In other words, waste comes in, activated carbon and other organic and safe products come out (sampangan.id, 2022).

Waste management by Carbonization Technology is an initiative strategy that supplies renewable power from waste (in line with SDG 7 – sustainable energy) and thus mitigate climate change (in line with SDG 13 – climate action). Ultimately, it could create job opportunities and promote economic growth. Thus, it will lead to achieving SDG 1 – no poverty and SDG 2 – zero hunger. It also aligns with other SDGs. For instance, by promoting sustainable practices and reducing environmental impact, it contributes to SDG 11 – Sustainable Cities and Communities by improving urban waste management systems. It also supports SDG 12 – Responsible Consumption and Production by encouraging the efficient use of resources and minimizing waste. Moreover, by enhancing economic growth and creating jobs, the initiative can help advance SDG 8 – Decent Work and Economic Growth, and through its potential to improve public health by reducing waste pollution, it indirectly supports SDG 3 – Good Health and Well-being. Finally, by fostering innovation in waste management technology, it contributes to SDG 9 – Industry, Innovation, and Infrastructure.

Environmental protection is strongly promoted in Islam. Islam promotes strong environmental protection through its teachings and principles, emphasizing stewardship (*khilafah*) of the Earth and its resources as a fundamental duty of believers. The Quran and Hadiths contain numerous directives and guidelines regarding the conservation of natural resources, prohibition of waste (*israf*), and sustainable use of land and water. Concepts such as *amanah* (trust), *adl* (justice), and *husn al-khulq* (good conduct) underscore the ethical responsibility of humans towards the environment and all living beings. Islamic jurisprudence (*fiqh*) also addresses environmental issues through principles like *darurah* (necessity) and *maslaha* (public interest), allowing for adaptive measures to protect the environment in light of contemporary challenges such as climate change and pollution. The history of Islamic civilization further exemplifies environmental stewardship through practices such as afforestation, water conservation, and urban planning that prioritize harmony with nature, showcasing Islam's enduring commitment to environmental protection. Islam, through its teachings in the Qur'an and Hadith,

emphasizes the responsibility of humans as stewards (khalifah) of the Earth, encouraging sustainable practices to preserve the environment for future generations. For instance, the Prophet Muhammad (peace be upon him) advocated for tree planting and preserving water resources, actions that resonate with modern sustainability goals. These principles are reflected in Islamic jurisprudence (fiqh), which contains guidelines on environmental ethics, supporting the idea that protecting the environment is an integral part of Islamic faith.

In Islam, several financial tools can be leveraged to support the mission of environmental protection. One of the prominent mechanisms is the concept of *Sadaqah* (voluntary charity), where individuals or institutions donate funds specifically designated for environmental conservation projects such as afforestation, wildlife preservation, or clean energy initiatives. Additionally, *Zakat* (obligatory almsgiving) can be directed towards environmental causes as part of broader efforts to promote social and environmental justice. Islamic banks and financial institutions also play a role through the development of green financing products, including Green Sukuk (Islamic bonds) that raise capital for sustainable infrastructure projects like renewable energy installations or eco-friendly developments. Furthermore, *Waqf* (endowment) can be utilized to establish perpetual funds dedicated to environmental protection efforts, ensuring a continuous stream of financial support for initiatives aimed at preserving natural resources and mitigating environmental degradation in accordance with Islamic principles. Green Sukuk and Waqf provide financial support for sustainable initiatives, directly aligning with the proposed green waqf model for waste management. Green Sukuk funds large-scale eco-friendly projects, while Waqf ensures ongoing financial resources for sustainable waste management, reinforcing Islamic principles of environmental stewardship and social justice.

One of the distinct advantages of Waqf over Sadaqah and Zakat lies in its enduring nature and sustainability. Waqf involves the establishment of an endowment where donated assets, such as property or funds, are held in perpetuity, with the generated income allocated towards charitable endeavors indefinitely. This perpetual cycle ensures a consistent and reliable source of funding for charitable activities over time, fostering long-term societal impact and sustainability. Unlike Sadaqah and Zakat, which are typically one-time or periodic donations, Waqf's perpetual structure allows for continuous support of various charitable causes, including education, healthcare, and social welfare, without depleting the initial endowment. Additionally, Waqf offers greater flexibility as it allows for the dedication of diverse assets beyond monetary contributions, enabling donors to leverage different resources for lasting philanthropic impact. This strategic approach to charitable giving aligns with principles of responsible stewardship and community empowerment, making Waqf a valuable instrument for sustainable social development and welfare.

The evolution of waqf within the Indonesian context demonstrates considerable promise for facilitating sustainable economic advancement and mitigating socio-economic issues. Waqf has been adeptly employed in various domains, including education, healthcare, and infrastructure (Hisyam & Marwini, 2024), with significant contributions from organizations such as the Salman Waqf Institution, which champions clean water and sanitation projects in alignment with the Sustainable Development Goals (SDGs) (Masruroh et al., 2024). Nevertheless, the administration of waqf encounters multiple challenges, such as limited public awareness, deficient regulatory structures, and insufficient managerial capabilities among nazirs (Hakim & Nawawi, 2024). Furthermore, the integration of digital platforms for the management of cash waqf has surfaced as a viable strategy to enhance visibility and augment waqf assets; however, this approach is impeded by a scarcity of qualified personnel and ineffective outreach initiatives (Adinugraha et al., 2024). Waqf in Indonesia possesses substantial potential for development, strategic reforms and capacity-building measures are imperative to fully realize its capabilities (Lathif, 2024).

Due to the aforementioned reasons, as an Islamic non-profit entity, waqf is anticipated to assume a significant role in safeguarding the environment and consequently facilitating a more sustainable progression of the nation. This concept is referred to as green waqf. Green Waqf was actually Muhaimin Iqbal's idea. His interest was in reducing the environmental damage caused by global warming and carbon dioxide emissions by planting trees. Green Waqf, inspired by Muhaimin Iqbal's vision, aims to

mitigate environmental damage through initiatives like tree planting. However, the implementation of such programs, particularly in waste management, remains underexplored. Research indicates that Iqbal's philosophy emphasizes the interconnectedness of humans and nature, advocating for sustainable practices as a moral obligation in Islam. The concept of eco-friendly development is also reflected in mosque-based initiatives, such as the Green Mosque program, which integrates economic and environmental goals to benefit local communities (Laksana Utama, 2023). Furthermore, Islamic teachings underscore the importance of environmental conservation, promoting practices like reforestation and responsible land use. The Hadith literature reinforces these principles, encouraging tree planting and discouraging deforestation (Rahman et al., 2024). While these frameworks provide a foundation for Green Waqf, specific applications in waste management are still lacking, indicating a need for further exploration and development in this area. Therefore, the purpose of this study is to propose a green waqf model for sustainable waste management in response to economic and environmental development.

2. Literature Review

2.1 Green Waqf

The regulation of waqf in Indonesia has evolved significantly, particularly with the enactment of Law Number 41 of 2004 and Government Regulation Number 42 of 2006, which provide a legal framework for waqf management and aim to enhance economic welfare among Muslims (Puspita & Tanjung, 2024). Then, Mr. Muhaimin Iqbal initiated the Green Waqf Project in 2021. It is facilitating the collaboration of activists in the field of waqf, environmental, and renewable energy. It is strategic not only for local and national but also global. The green waqf is expected to help achieve the Sustainable Development Goals. The Green Waqf aims to address contemporary world issues like climate change and energy security (Waqf Center for Indonesian Development and Studies) (WaCIDS), 2021). By utilizing the funds generated from the green waqf, projects can be implemented to promote environmental sustainability and reduce carbon emissions. This innovative approach to waqf management demonstrates a commitment to both social responsibility and environmental stewardship. It also showcases the potential for Islamic finance to contribute positively to global sustainability efforts. The green waqf model serves as a bridge between traditional Islamic principles and modern environmental challenges. This model not only benefits the environment but also provides a sustainable source of income for the community. It highlights the adaptability of Islamic finance to address contemporary issues and create long-term impact.

The Indonesian Waqf Agency plays a crucial role in the development and implementation of Green Waqf, which aims to leverage waqf for environmental sustainability. This agency is pivotal in coordinating efforts among various stakeholders, including nazhir (waqf managers), local governments, and the Ministry of Environment and Forestry, to promote Green Waqf initiatives that protect terrestrial ecosystems and support sustainable development goals (SDGs) (Irfany et al., 2023). Research indicates that the agency must address challenges such as the lack of professionalism among nazhir and low public literacy regarding Green Waqf. Furthermore, establishing a legal framework for Green Waqf is essential for its growth and effectiveness. The agency is also tasked with fostering relationships between wakif (donors) and nazhir, as well as promoting innovative green product development programs. Overall, the Indonesian Waqf Agency is integral to enhancing the impact of waqf in environmental conservation and sustainable economic development in Indonesia (Rusydiana et al., 2023).

2.2 Sustainable Waste Management

Sustainable waste management is the process of collecting, transporting, recycling and disposing of various types of waste. The goal was to protect the environment, human health, and future generations. Sustainable waste management entails creating a circular economy for garbage (rather than a "make, use, dispose" approach). In sustainable models, waste is converted into new products or sources of energy. This means that sustainable models allow circular models instead of linear models (Seadon, 2010).

Waste management has several techniques: recycling, composting, landfilling, incineration, biogas production, pyrolysis, and plasma gasification. Carbonization technology is today the most preferred

waste management technology. Carbonation technology is a heat treatment process that combines pyrolysis and gasification. This is called decomposition, and because it uses thermal radiation in the absence of oxygen (which does not burn), the process does not cause pollution. Simply put, the concept is similar to an oven or rice cooker. No fire, but thermal radiation (Ardhistira, 2020). It is a thermochemical conversion process that offers the potential to convert biomass and organic wastes into solid biofuels and liquid and gaseous products in the presence of water. It is a low-energy alternative to transforming waste from various sources: sewage sludge, lignocellulosic biomass, algae and other types of waste (Czerwińska et al., 2022).

Many studies have shown that carbonization technology can be utilized successfully for sustainable waste management. Carbonization is an efficient method of converting polymer precursors into useful carbon compounds for application in energy conversion and storage, environmental protection and remediation (Chen et al., 2020). Carbonization converts organic precursors such as plastics into carbon materials. Hydrocarbons, activated carbon, carbon nanotubes, graphene, carbon fibers, and carbon spheres can be produced. Hydrocarbon-derived carbon materials have high potential for various applications such as solid fuels, supercapacitors, fuel cells, and adsorbents (Shen, 2020). They proposed the feasibility, application prospects and challenges of carbonization as a way to recycle plastic waste, as plastic waste has a high calorific value and is suitable for use as fuel (Iñiguez et al., 2019).

Carbonization technique is the most suggested and promising way for converting trash into electricity in Indonesia. It is also strongly suggested for long-term medical waste treatment. It could reduce damages to human health, ecosystem quality, climate change, and resources, all in comparison to incineration and landfilling (Ardhistira, 2020).

2.3 Green Waqf for Sustainable Waste Management

Environmental protection is strongly promoted in Islam. On the contrary, destroying the environment and failing to participate in its protection is seen as abusing the decrees of God and the Prophet Muhammad. One of the financial tools for this mission is waqf. As an Islamic non-profit organization, waqf is expected to play an important role in protecting the environment and thereby ensuring a more sustainable development of the country.

Waqf to protect the environment is not fundamentally a new idea. It was developed based on the acceptance of Khashi Waqf and Istibdal by early jurists. In this regard, the Kuwait Aukaf Public Foundation (KAPF) has played a key role in raising public awareness of the importance of environmental waqf. In 1992, KAPF established the Waqf Company Kuwait Company for Environmental Services, mainly focused on cleaning services. This is to ensure that Waqf facilities prioritize environmental protection. KAPF also established the Environment Fund in 1995 with the aim of protecting and preserving the environment. In addition, KAPF is preparing a project to treat the mosque's sewage and use it to water the mosque's plants. Finally, in addition to building and maintaining the mosque, KAPF is also commissioned to green the gardens (Budiman, 2011).

In Indonesia, waqf, which is conscious of environmental protection and remediation, is relatively new. In fact, waqf is less popular for environmental purposes than other forms of waqf, such as religious, educational, health, and anti-poverty measures. There are some groundbreaking programs introduced by waqf agencies and others. Most programs involve planting or growing trees, building wells, and building water treatment plants. His waqf for waste management has yet to be found (Hasan, 2022).

Environmental waqf, also known as waqf for environmental protection (more particularly, waqf for sustainable waste management), is an Islamic legislation that can be modified in this regard. Waqf is a voluntary community project, thus it does not require government funding. The government's primary responsibility is to raise public awareness and give appropriate support in terms of land management, legal issues, and financial incentives to individuals interested in this noble gesture. To increase the possibility of successful waqf development, waqf institutions can first apply the cash waqf model and the autonomy model, and then gradually apply additional models based on waqf institution experience (Ascarya et al., 202i2).

2.4 Previous Study

Many scholars have focused on the concept of green waqf, which involves allocating monetary waqf to prevent global warming and climate change. One study, titled "Enhancing Waqf Forest Sustainability through Agroforestry" by Jannah et al. According to their findings, based on Sustainable Forest Management (SFM) objectives, agroforestry practices in waqf forests are expected to increase forest resources, biodiversity, forest health, forest production, and protection functions, as well as contribute to social and economic development benefits (Jannah et al., 2021). However, Jannah's research concentrated on green waqf for agroforestry to accomplish sustainable forest management. In contrast, the purpose of this study was to suggest a green waqf model for sustainable waste management in order to accomplish Indonesia's Sustainable Development Goals.

Another study entitled Waqf and Waste: Unknown Possibilities" by Wildana & Manjirati. They said waqf facilities, whether privately or publicly managed, can reduce the burden on governments in managing waste generated by society, both in terms of commitment and budget. rice field. The ultimate goal of their conception is to protect the environment and life as one of the obligations enshrined in Maqashid Shariah to achieve the Falah (Wildana, 2021). However, their concept did not describe a green waqf model for sustainable waste management, but merely discussed the potential of his waqf in waste management.

Nurul Fatma Hasan conducted research named "Enhancing Green Waqf for Carbonization Technology: Opportunities for Sustainable Development Goals (SDGs) in Indonesia". That study suggested that expanding green waqf for carbonization technology should be a priority program for environmental protection while also increasing economic power (Hasan, 2022).. However, the study only explored the concept of green waqf for certain sustainable waste management technologies (carbonization), not the green waqf model.

The novelty of this research is the green waqf proposal especially for sustainable waste management. Green waqf model for sustainable waste management is a new proposal. This research proposes a green waqf model for sustainable waste management that would create a good impact for the economic and environmental development.

2.5 Research Framework

Given the benefits of sustainable waste management, a concept emerges: establish a waqf for sustainable waste management, known as Green Waqf. Thus, improving the green waqf model for sustainable waste management (particularly, carbonization technology) should be a top priority for environmental protection while also advancing economic power. It is strongly encouraged to support the green economy. Hopefully, it will reveal chances to achieve the Sustainable Development Goals (SDGs) in Indonesia. The scheme is as follows:

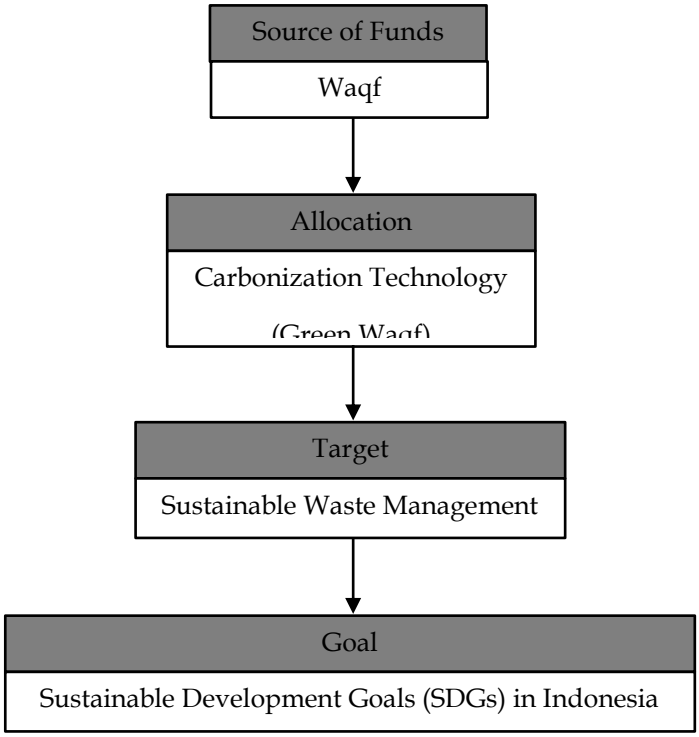

Figure 2. Research Framework (Hasan, 2022)

3. Research Method

This research employs a descriptive qualitative approach, focusing on a literature review to explore and analyze relevant scholarly works. The data used in this study is primarily secondary data, sourced from academic journals, books, reports, and other reputable publications. Data collection is conducted through documentation and literature review, where various existing research, theories, and case studies related to the topic are gathered and examined. The selection of sources is based on their relevance and contribution to the research objectives. For data analysis, the research utilizes content analysis techniques. This involves systematically categorizing, interpreting, and synthesizing the information collected to draw meaningful insights and conclusions. The analysis aims to identify patterns, themes, and gaps in the literature, providing a comprehensive understanding of the subject matter.

4. Results and Discussions

Green waqf is another form of cash waqf. Cash waqf, a concept rooted in Islamic finance, is a form of charitable endowment where an individual or institution dedicates a sum of money to support specific charitable or social causes. Unlike traditional forms of waqf that involve physical assets like land or buildings, cash waqf deals with monetary contributions. The establishment of a cash waqf involves the transfer of ownership of the funds to a waqf institution, which manages and invests the money in sharia-compliant ventures. The returns generated from these investments are then used to fund charitable projects and initiatives, such as education, healthcare, or poverty alleviation, in perpetuity.

The main purpose of establishing cash waqf is to provide waqif an opportunity to meet their needs while seeking rewards in the afterlife. Even a small amount can bring benefits to this institution. In addition, cash waqf institutions can also play a fundraising role, generating funds needed to rebuild old waqf buildings on the one hand, and generating services to the community and creating new jobs on the other. Thus, the modus operandi proposed for green waqf institution is as follows:

1) The founder of a green waqf institution or a fundraiser could be from individuals, organizations, companies, corporations, government, or institutions.
2) In its role, green waqf institutions must provide the list of benefits and the list of beneficiaries. It can gather more contributors to donate cash waqf (either directly or indirectly) to selected beneficiaries.
3) Green waqf institutions can manage and accumulate cash waqf and are allocated in accordance with the type of cash waqf made, that is for sustainable waste management (by carbonization technology).

This study proposes a green waqf model for sustainable waste management. The Green Waqf model offers significant benefits for sustainable waste management by providing a structured and perpetual funding mechanism for environmentally friendly initiatives. Through Green Waqf, endowments can be established specifically for waste management projects such as recycling facilities, waste-to-energy technologies, and community education programs on waste reduction. These initiatives not only address immediate waste disposal challenges but also promote long-term sustainability by reducing environmental pollution, conserving resources, and fostering a culture of responsible waste management practices within communities. Furthermore, the perpetual nature of Green Waqf ensures a continuous stream of funding for ongoing waste management efforts, contributing to the overall sustainability and resilience of waste management systems.

Based on Taker's research, we have combined green waqf investments with human capital development through an integrated green waqf waste management investment model. This model is specifically designed for human capital development of beneficiaries/institutions. Enhancing them through human capital development programs makes sense by ensuring that Waqf cash funds are properly used to establish state-of-the-art training centers with subsidized and state-of-the-art equipment. is an effort. The training center will subsidize the participation fees of enterprises and provide enterprises with the opportunity to conduct training programs and other types of activities to modernize, upgrade and improve the human capital competencies and capabilities of enterprises. Become. This project has the potential to have a great impact on society through human resource development programs. Of course, the most significant impact will be on government budgets, as the model is expected to generate its own funds from cash waqf for the development of society's human capital (Thaker, 2021).

The proposed green waqf model, as exhibited in Figure 3, involves the following five stages:

1) First, donor or waqif transfers cash waqf to nazir or waqf institution.
   Waqif is pivotal as they are the initial founder or donor who establishes the endowment by dedicating assets such as property, funds, or other valuables for charitable purposes. The Waqif's role includes defining the specific objectives and beneficiaries of the Waqf, outlining the terms and conditions governing its management and utilization, and ensuring compliance with Islamic legal principles and ethical standards. Through their philanthropic act of Waqf, the Waqif contributes to the social welfare and development of the community while fulfilling religious obligations and earning spiritual rewards. Waqif or donors can come from individuals, institutions/organizations, and governments. Waqf institutions (called 'Nazirs') serve as the trustee or administrator responsible for managing and overseeing the assets and operations of the Waqf endowment. Their duties include safeguarding the Waqf property, ensuring that the income generated is used in accordance with the donor's intentions and Sharia principles, and maintaining accurate records of financial transactions and disbursements. The Nazir plays a pivotal role in upholding the integrity and sustainability of the Waqf institution, ensuring transparency, accountability, and effective utilization of resources for charitable purposes.
2) Second, waqf institutions will utilize waqf funds to operate training centers equipped with cutting-edge technology (carbonization technology) and will be subsidized to promote human resource development.
3) Third, waqf facilities provide skill development training programs and business-oriented educational short courses through training centers to facilitate beneficiaries/enterprises (*mauquf 'alaih*) to improve the quality of their workforce. To increase beneficiary participation, a subsidized rate should pay a minimal fee.
4) Fourth, after receiving the necessary skills and training from waqf institutions, beneficiaries are expected to get jobs and become more productive, which in turn leads to increased incomes (in line with achieving SDG 1-no poverty and SDG 2-zero hunger). In addition, sustainable waste management could manage any type of waste that creates a green and comfortable environment (in line with achieving SDG 3-good health and wellbeing and SDG 11-sustainable cities and communities). Besides, sustainable waste management could produce hydro char or carbon materials which have high potential in various applications such as solid fuel, supercapacitor, and fuel cell (in line in achieving SDG 7-sustainable energy and SDG 13-climate action). Shortly, a green waqf

model for sustainable waste management could be implemented as a response to economic and environmental development in Indonesia.

5) *Fifth*, for the continuous improvement, accountability and performance report can be conducted through monitoring and evaluation. Continuous improvement in a Waqf institution involves a systematic approach to enhancing its operations, services, and impact over time. This includes regular assessments and reviews of policies, processes, and outcomes to identify areas for optimization and innovation within the institution's governance and management frameworks. Accountability, monitoring, and evaluation mechanisms are crucial aspects of this process, ensuring transparency, integrity, and effectiveness in the utilization of Waqf assets and resources for charitable purposes while upholding ethical standards and fulfilling donor intentions.

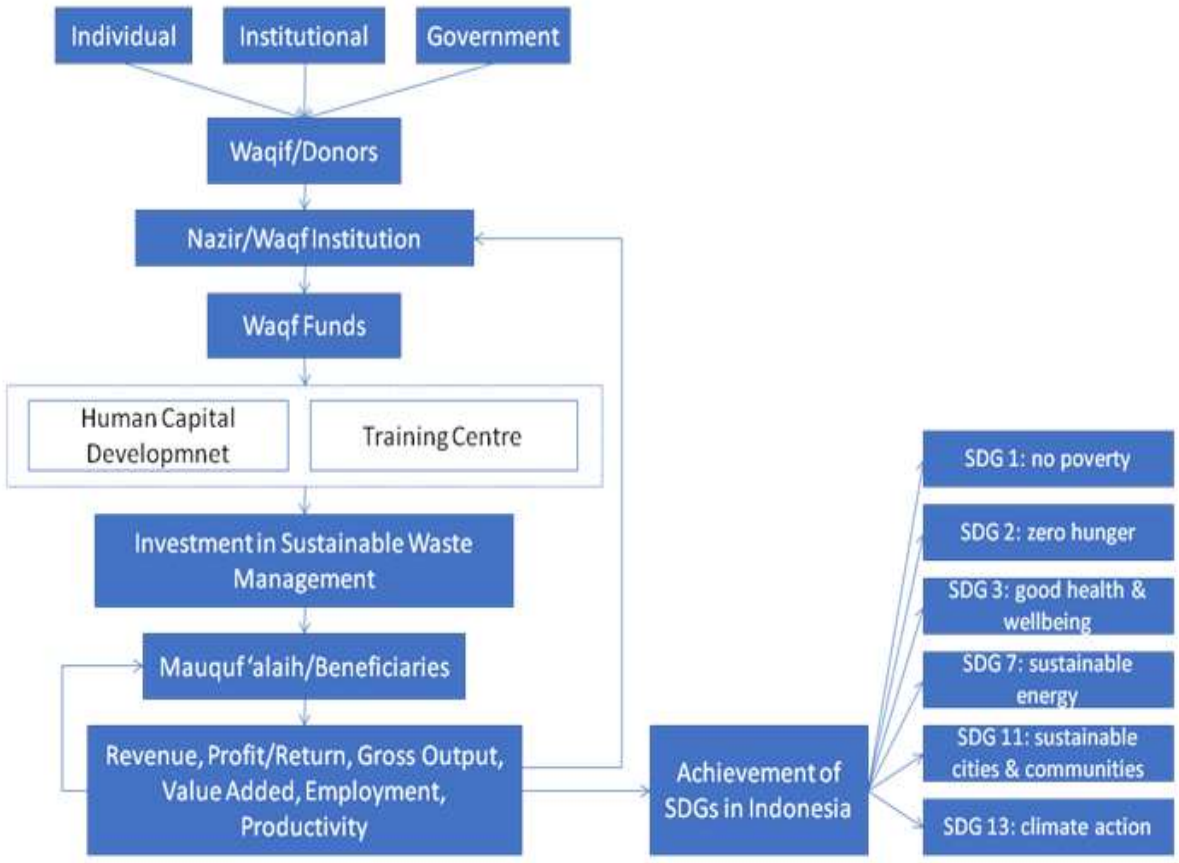

Figure 3. Green Waqf Model for Sustainable Waste Management (author's own)

The proposed green waqf model aims to provide ongoing support to beneficiaries (the poor/needy) in the form of training and education programs funded by the waqf foundation. In this sense, the green waqf model is a sustainable model that has the potential to complement other existing governmental and non-governmental programs in Indonesia. As a result, the proposed green waqf model will benefit economic growth and the Sustainable Development Goals. Because as soon as a society benefits from this model, other societies are also motivated. This will help create more employment opportunities and reduce poverty at the grassroots level. Proper implementation of the model is expected to improve the productivity of society. If successfully implemented, the proposed model could serve as a role model for other companies developing waqf funds.

We must emphasize, nonetheless, that there may be some difficulties with the suggested paradigm. The system, product, regulation, and information technology are the main issues and difficulties encountered in the growth of cash waqf institutions. Thus, in order to create a cash waqf, it is essential for waqf

institutions to be transparent and accountable, to develop nazir to a high standard, and to employ creative marketing methods (Rusydiana, 2018).

Green Waqf presents a novel and impactful approach to addressing both economic and environmental challenges. Through the establishment of endowments specifically dedicated to environmentally sustainable projects and initiatives, Green Waqf contributes significantly to the development of a greener economy. The funds generated from these endowments can be channeled into renewable energy projects, ecological conservation efforts, and green infrastructure development, all of which are essential for fostering sustainable economic growth while preserving the environment for future generations.

Furthermore, the impact of Green Waqf extends beyond immediate economic benefits to encompass broader environmental sustainability goals. By promoting investments in clean technologies, climate change mitigation, and eco-friendly practices, Green Waqf contributes to reducing carbon footprints, conserving natural resources, and mitigating environmental degradation. This dual focus on economic and environmental development underscores the potential of Islamic finance mechanisms like Green Waqf to play a crucial role in the transition towards a more sustainable and resilient global economy.

5. Conclusions

The proposed green waqf model for environmentally friendly waste management will be advantageous for both economic and environmental growth. Five steps make up the green waqf model that has been proposed: Waqif would first transfer cash waqf to the nazir, or waqf institution. Second, through managing training facilities outfitted with waste management technologies utilizing waqf funds, nazir would encourage the growth of human capital. Third, to help beneficiaries (*mauquf 'alaih*) strengthen their abilities, nazir would offer training programs through the training facilities. Fourth, it is anticipated that after acquiring the required education and training from the nazir, the beneficiaries will find employment and increase their output of productivity. Fifth, monitoring and evaluation should be conducted for the continuous improvement.

Of course, the government must provide significant assistance for the suggested green waqf model. Government is required to raise public awareness of this issue, as well as to offer the necessary assistance in terms of land management, legal matters, and incentives to those engaged in this admirable activity.

Limitation and Recommendation

This is literature-based research and has not been implemented yet, so the detailed model needs to be further designed. Given its potential and challenges, further research will be conducted to validate the proposed green waqf model through focus group discussions with active participation of relevant stakeholders such as government agencies, academia and waqf agencies. With the support of both qualitative and quantitative research, the proposed green waqf model can be validated for its successful implementation.

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