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SOCIAL ENTREPRENEURSHIP IS BEING UTILIZED TO ADDRESS THE ISSUE OF FOOD WASTE IN THE REGION OF WEST JAVA

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Abstract

Indonesia, the greatest waste producer in Southeast Asia, is grappling with a significant issue of food waste, which makes up 41.07% of the nation's overall waste. Waste4Change, a social enterprise specializing in sustainable trash management, is collaborating with the Bekasi administration to address the issue resulting from insufficient public awareness. The study elucidates Waste4Change's role in attaining the 12th Sustainable Development Goal (SDG) in West Java. This is accomplished through the utilization of descriptive analysis methods and data collection approaches such as interviews and literature studies. Waste4Change employs norm life cycle theory and a global governance strategy to transform the way society manages food waste. Studies indicate that Waste4Change has adopted a comprehensive strategy for waste management by utilizing campaigns, teaching, and collaboration. However, limitations in infrastructure, technology, and resources hinder individuals from acquiring further knowledge on the subject of food waste management. Further assessments are required to determine the long-term efficacy of Waste4Change in attaining sustainable development objectives in West Java.

Keywords: Food Waste; Sustainable Development; Waste4Change.

Abstrak

Sebagai kontributor sampah terbesar di Asia Tenggara, Indonesia menghadapi masalah besar dengan sampah makanan, yang mencapai 41,07% dari total sampah negara. Dalam hal ini, Waste4Change, sebuah perusahaan wirausaha sosial yang berfokus pada pengelolaan sampah berkelanjutan, bekerja sama dengan pemerintah Bekasi untuk menangani masalah ini yang disebabkan oleh kurangnya kesadaran masyarakat. Penelitian ini menjelaskan kontribusi Waste4Change dalam pencapaian Sustainable Development Goal (SDG) ke-12, khususnya di Jawa Barat, dengan menggunakan metode deskriptif analisis dan teknik pengumpulan data melalui wawancara dan studi literatur. Untuk mengubah cara masyarakat menangani sampah makanan, Waste4Change menggunakan teori norm life cycle dan pendekatan global governance. Penelitian menunjukkan bahwa Waste4Change telah menerapkan pendekatan keseluruhan untuk pengelolaan sampah melalui kampanye, instruksi, dan kerja sama. Meskipun demikian, masalah infrastruktur, teknologi, dan keterbatasan sumber daya menghalangi masyarakat untuk belajar lebih banyak tentang pengelolaan sampah makanan. Untuk mengetahui seberapa efektif Waste4Change dalam mencapai tujuan pembangunan berkelanjutan di Jawa Barat dalam jangka panjang, evaluasi tambahan diperlukan.

Kata Kunci: *Sampah Makanan; Pembangunan Berkelanjutan; Waste4Change*

INTRODUCTION

In 2019, the amount of food that was discarded worldwide amounted to 931 million tons, according to the UNEP (2022). According to data from statista.com (2020), China, India, Nigeria, Indonesia, and the United States are the five nations that are classified as the primary contributors to global food waste (Ian, 2023). Indonesia holds the top position in food waste production among all countries in the Southeast Asia area (UNEP, 2022). In 2022, Indonesia produced a total of 19.5 million tons of garbage, with food waste accounting for 41.07% of the total. The waste composition resulting from domestic activities accounts for 39.97% of the total trash generated. Out of this total, only 9.3 million tons are effectively managed, according to SIPSN (2022). The remaining waste is disposed of in landfills, incinerators, and sewage systems (UNEP, 2022).

Factors that impact an individual's waste production include their attitudes, social conventions, meal planning habits, and socio-demographic characteristics. Personal norms occur when an individual becomes concerned about their environment. According to the theory of Perceived Behavior Control (PBC), if a person is able to effectively manage food, it can be inferred that they are making attempts to minimize food waste (Sparks et al., 2002).

Developed countries generate 31% of both food and organic waste. The dry trash category, which includes materials such as plastic, paper, cardboard, metal, and glass, makes up 51% of the total waste. In the meantime, emerging nations produce 56% of both food and organic waste. The remaining garbage accounts for 53% of the total, whereas just 16% is suitable for recycling. The issue lies in the fact that only 20% of the waste management costs in cities in developing nations is borne by the community. Consequently, 90% of the waste produced is disposed of by dumping or burning it in the open (Kaza et al., 2018).

Financial constraints are a contributing factor to the disregard of the consequences of food waste. Moreover, the operation of segregating food that remains appropriate and can be reprocessed is deemed a time-consuming endeavor. Throwing food into the trash is a convenient method commonly practiced by individuals in underdeveloped nations (Chaerul & Zatadini, 2020). These findings indicate that the state of food waste varies across different countries (Wulandari & Asih, 2020).

By 2050, urbanization is expected to grow by 70%, leading to a corresponding increase in trash creation to 3.4 billion tons. East Asia and the Pacific region produced a significant increase of 468 million tons of trash, making it the greatest producer with a share of 44% (Kaza et al., 2018).

Waste management regulations in Indonesia are governed by Peraturan Pemerintah Nomor 81 Tahun 2012, which specifically addresses the management of household waste and waste that is similar to household waste. Food waste management is included in Undang-Undang Nomor 18 Tahun 2008. The government and local authorities have a responsibility to ensure the effective and environmentally sustainable management of garbage within the community. The management of household waste and waste similar to household waste involves the reduction of waste and the proper handling of waste generation (JDIH BPK, 2023). The government and local authorities have a responsibility to ensure the effective and environmentally sustainable management of garbage within the community.

The management of household waste and waste similar to household waste involves the reduction of waste and the proper handling of waste generation. garbage management is the process of categorizing garbage, gathering it in temporary and combined waste contain-

ers, transferring it from its origin to a landfill, treating its specific properties, and engaging in composting. Ecologically sound disposal of garbage or residue back into the environment.

Food waste originates from the exclusion of food from the food supply chain (UNEP, 2022). Food waste arises when businesses and consumers discard or squander food within the food system chain due to it being seen reasonable or justifiable. Food waste is categorized as part of the broader group of decomposable solid waste, which includes Avoidable Waste (food waste that can still be prevented) and Unavoidable Waste (food waste that cannot be prevented) (Lestari & Halimatussadiah, 2022).

According to UNEP (2022), food waste ranks as the third highest contributor to greenhouse gas emissions, following energy production and industry. It is responsible for 6% of the overall emissions, as stated by Ritchie (2020). Food waste generates methane gas (CH4) and nitrous oxide (N2O), both of which have the potential to harm the environment (Aprilia, 2021).

Food waste has also negatively impacted Indonesia, particularly in the economic sector, resulting in significant losses of up to 551 trillion. Food waste in the social sector results in Indonesia losing energy that could have fed about 125 million people. Nevertheless, there is a paradoxical situation as indicated by the statistics from the Global Hunger Index, which ranks Indonesia as the third most hunger-stricken country in Southeast Asia (Rizaty, 2021).

The state of food waste management in Indonesia is now falling behind, hence it is crucial for the community to acknowledge this issue (Chaerul & Zatadini, 2020). Presently, a little 18% of the entire population of 100 individuals possess the ability to address the issue of food waste in Indonesia (Dwinanda, 2019), while a mere 22% of the total 73% of garbage that is directly deposited in landfills can be subjected to recycling (Susilo et al., 2021).

Consequently, there is a growing potential for trash formation due to increasing production activities and a lack of public knowledge in segregating organic and non-organic garbage (KEMENKEU, 2023). Consequently, the waste management process in Indonesia has emerged as a significant impediment. Hence, it is crucial for every individual to possess awareness in order to effectively assume the responsibility of being catalysts for environmental change (Susilo et al., 2021).

Waste management in Indonesia is categorized into two sectors: the formal sector, which includes formal enterprises and city agencies. The informal sector comprises unregistered individuals, groups, and small companies. The informal sector places a strong emphasis on the practice of recycling (Aprilia, 2021).

Waste4change operates within the informal sector of recyclable trash management in the region of West Java. Waste4change's presence can assist the government in mitigating waste, particularly food waste. As a social enterprise involved in the management of garbage. Waste4change is connected to the International Solid Waste Association (ISWA) (ISWA, 2021c).

Both Waste4Change and ISWA share the common objective of attaining SDG 12 by adopting waste reduction as a means to promote sustainable consumption by the year 2030 (ISWA, 2023). The objective is to acquire waste management technologies and techniques that are efficient, effective, and adaptable, and their implementation is conducted in a collaborative manner (KLHK, 2021). The necessity for research pertaining to the significance of waste management arises from the potential adverse consequences on the environment if food waste is not effectively handled. The community is particularly vulnerable to these repercussions, since improper management can lead to the accumulation of food waste (Kaza et al., 2018).

LITERATURE REVIEW

Approximately 90% of the Indonesian population lacks awareness and education on trash management, resulting in a significant accumulation of waste in the country. The

population of DKI Jakarta has been growing, resulting in a steady rise in the quantity of rubbish being deposited at the Bantargebang landfill in Bekasi, West Java, reaching a total of 7000 tons. This gives rise to other issues, such as ecological contamination and obstructed water channels that result in inundation. The DKI Jakarta government has encountered difficulties in trash transportation despite implementing waste sorting measures. To address this issue, it is imperative to alter the community's thinking to discourage littering and encourage active engagement from community members. Waste4Change's establishment in 2013 offers a resolution to the issue. By means of consultation, campaigns, education, and the processes of collecting, sorting, and transporting waste, recycling and upcycling are carried out (Yuliani, 2018).

An anti-food waste movement was initiated by waste pickers in Germany between 2012 and 2016 with the aim of promoting the sale of rotten fruits and vegetables by merchants as a means of controlling food waste. Edekan supermarkets launched a campaign to address spoiled products, using the motto "nobody's perfect." Misfit eateries collaborated with them to alter people's perception. The objective of this initiative is to reduce poverty by promoting collaboration between businesses and customers through sustainable campaigns and corporate social responsibility (CSR) activities. Foodsharing facilitates all aspect of society's involvement and successfully managed food waste in 2018 (Gollnhofer & Boller, 2019).

Efforts to decrease food waste are being made through the implementation of many programs, including education, extensive social media campaigns, and the creation of businesses with a primary emphasis on addressing food waste in families. To address the issue of food waste, individuals are educated on effective storage methods, as well as instructed on composting procedures and the utilization of biofuels. The Solid Waste Management and Public Cleansing Corporation (SWCorp) in Malaysia made a contribution, however the program was discontinued because of financial constraints. The Love Food Hate Waste campaign was executed in the United States through the dissemination of press releases and radio broadcasts.

The United Nations has set a goal to reduce food waste by the year 2030. This will be achieved through cooperation and collaboration at the international, national, regional, and local levels. Strategies include conducting consumer awareness campaigns, establishing new business models, and implementing food redistribution programs. (Diaz-ruiz et al., 2019).

Waste4change is a social entrepreneurship that interacts with government agencies, such as the DKI Jakarta Provincial Cleanliness Office and the Bekasi City Office, through its Campaign, Consult, Collect, and Create program. The aim is to address the waste problem and work towards achieving a waste-free Indonesia. The company's finance is derived from both investors and the revenue generated by the company itself (Syachbana, 2017).

METHOD

This study employs a descriptive analysis methodology to provide an overview of the phenomenon of waste issues and the role of social entrepreneurs in addressing food waste. The data collection techniques used include interviews, observations, and literature studies, with qualitative data analysis methods.

RESULT AND DISCUSS

1. Waste4Change is a social entrepreneur that specializes in managing food waste in Indonesia.

Waste4Change is an Indonesian firm that provides waste management services. The organization is guided by the principles of Liberalism Institutionalism and places a strong emphasis on Sustainable Development Goals (SDGs), specifically SDG 12. By following this approach, Waste4Change aims to create long-term benefits for both the present and future generations (Atkinson, Simon, and Eric, 2007; Bornstein and Davis, 2010).

Established in 2014 by Mohamad Bijaksana Junerosano, Waste4change is dedicated to practicing responsible waste management in Indonesia. Waste4Change, a company focused on managing environmental home waste in Indonesia, recognized the potential for collaboration to achieve its goals. In 2020, it secured investment assistance from Agaeti Ventures, East Ventures, and SMDV.

By 2024, it is anticipated that these funds will enable the management of 2000 tons of waste in the Material Recovery Facility, the implementation of Smart City initiatives, and the establishment of government collaboration with the private sector, investors, and the community to achieve a circular economy in Indonesia (Waste4change, 2019b). Waste4Change's primary initiatives consist of consult, campaign, collect, and develop. These endeavors aim to effectively manage food waste with the ultimate goal of attaining SDGs 12, specifically responsible consumption and production (Waste4change, 2013).

Waste4change engages with several institutions to help the attainment of SDGs 12:

a) Collaborating with ISWA (International Solid Waste Association)

The International Waste Management Association (ISWA) was founded in Rotterdam, the Netherlands. It is a global organization that works on waste management at an international level, with the goal of achieving a circular economy. ISWA interacts with multiple stakeholders to accomplish its objectives (ISWA, 2021a). It establishes knowledge networks and performs research on a global scale in the field of waste management. The membership of this organization is inclusive, including individuals, organizations, communities, institutions, and private corporations. Its primary objective is to advance sustainable waste management practices across different countries (ISWA, 2021b).

Waste4Change, an Indonesian waste management company, is a silver member of ISWA. Both organizations have aligned goals in working towards SDGs 12, with a specific focus on implementing effective and efficient waste management practices and promoting community engagement. By becoming a member, individuals gain the privilege of utilizing worldwide resources and receiving discounts for ISWA events. This fosters a robust collaboration in the pursuit of shared objectives in sustainable waste management (MoEF, 2021).

b) Engage in a partnership with the West Java Government

Waste4Change partners with the local government of West Java to address trash issues in 100 different places in Bekasi Regency, Bekasi City, and Karawang Regency.

The administration in West Java, a province experiencing substantial population expansion, has implemented measures to promote the Sustainable Development Goals (SDGs) by integrating three sectors through the Regional Action Plan (RAD) (Localisesdgs-indonesia.org, 2020). The "Bogor Without Plastic Bags" (BOTAK) program and the "Kang Pisman" movement in Bandung City have the objective of diminishing plastic waste and effectively handling organic garbage (Jabarprov.go.id, 2021). Nevertheless, there are still challenges to be addressed, including the scarcity of human resources and knowledge, as evidenced in the Pangandaran sub-district (Maryana, Supena, & Suwarlan, 2022).

c) Engage in cooperation with the Waste Bank Community

A waste bank is a facility that gathers, organizes, and trades dry waste using a banking methodology. Waste management is facilitated, community revenue is boosted, and the circular economy is promoted (Waste4Change, 2020b). In 2015, Waste4Change collaborated with Bank Sampah Vida in Bekasi to provide education and develop a community focused on waste management.

d) Join the Indonesia Circular Economy Forum (ICEF)

The Indonesia Circular Economy Forum (ICEF) is a platform dedicated to the discussion and dissemination of knowledge regarding the concept of circular economy in Indonesia. ICEF collaborates with the private sector, government, and environmental professionals to develop solutions and strategies for waste management and the implementation of a circular economy (indonesiacef.id, 2022). The forum has organized multiple meetings on diverse topics such as waste management, the impact of product design on the circular economy, and strategies for rebuilding a sustainable economy during the COVID-19 pandemic (ACV.CV, 2021). Proposed solutions encompass public education, regulatory support, and stakeholder collaboration (Cleanomic.co.id, 2021).

2. The program in West Java focuses on SDG 12, which aims to promote responsible consumption and production

The SDGs, or Sustainable Development Goals, are a set of objectives for achieving sustainable development by the year 2030. These goals prioritize human rights, universal equality, and the protection of future generations (Indonesia.un.org, 2023). The objective of SDGs aim point 12 is to establish sustainable production and consumption practices by reducing food waste and post-harvest supply losses by 50% before the year 2030 (Sdgs.bappenas.go.id, 2023). The primary emphasis in West Java is on fostering economic growth, promoting tourism, and developing infrastructure to facilitate the achievement of the 17 Sustainable Development Goals (SDGs). This is being pursued through the integration of three sectors in the Regional Action Plan (Bappeda.jabarprov.id, 2018). The "Bogor Without Plastic Bags" (BOTAK) campaign effectively decreased 50 metric tons of plastic garbage (Localisesdgs-indonesia.org, 2020).

The "Kang Pisman" initiative, which centers around the management of organic waste, has been launched in Bandung City. However, there are still challenges in the Pangandaran sub-district, including the shortage of personnel and information (Maryana, Supena, & Suwarlan, 2022).

3. Waste4Change's Endeavors in Managing Food Waste

a) Global Food Waste Challanges

Food waste management is a worldwide problem that is connected to the increase in population and economic activity (Rachman and Septiana, 2020). Efforts to mitigate food waste through techniques such as anaerobic digestion, aerobic composting, and fermentation strive to reclaim squandered energy and resources. Nevertheless, relying solely on biological processes does not offer a comprehensive answer to the impending issue of food waste. The concept of Zero Waste is gaining prominence as a comprehensive approach aimed at restoring water, resources, and energy without producing any solid waste.

The obstacles encountered include issues with food wastage, incineration, and direct disposal methods that are subject to criticism. Incineration, which combines combustion and biological consumption, is being recognized as an alternative (Hadiningrat, 2020). When dealing with the climate emergency, it is crucial for all parties involved, such as food producers, consumers, and women in waste management, to play a significant role. Additionally, there needs to be better coordination to successfully achieve SDG goal 12 (Gills and Morgan, 2020).

b) Waste4Change's Initiatives in Food Waste Management in West Java

Waste4Change is a corporation that offers practical and effective solutions to address trash problems in Indonesia. The company provides four primary services: Consult, which involves offering consultation for waste management data analysis; Campaign, which focuses on socialization and education; Collect, which entails garbage transportation; and Create, which involves waste processing.

Consultation encompasses research that assesses waste management systems, including technical studies, social engagement, and other factors, in order to enhance effectiveness and promote ecological sustainability (Waste4change, 2023). One of the programs included is the Feasibility Study, which performs study on locations that have waste (Waste4change, 2019a). A socialization effort is being conducted by stakeholders that are engaged in waste management to promote information and education. The goal is to achieve a shift towards a circular economy, as envisioned by Waste4change in 2023.

The programs offered by Waste4Change include 3R School, which focuses on educating students in schools, EDUBIS (Edukasi Bijak Sampah), which provides waste management education for employees in companies, schools, or communities, AKABIS (Akademi Bijak Sampah), which is a waste management training program, and Cleaning Service Education, which offers waste management training specifically for cleaning services. In addition, there is a service called Collect, which involves the transportation of rubbish that has been sorted based on its type (Syachbana, 2017). The categories are Event Waste Management, Commercial Waste Management, Residential Waste Management, and Personal Waste Management (Syachbana, 2017). The final category is "Create," which specifically addresses waste management. This involves the conversion of organic waste into compost and the sorting of inorganic trash. The recyclable portion of the inorganic waste is then sold for reuse (Waste4change, 2020a).

Waste4Change engages in waste management at different events and educates the public about the significance of effective and responsible waste management. Additionally, it contributes to raising awareness about proper waste management practices. Additionally, they actively endorse the Zero Waste initiative in West Java and collaborate with diverse stakeholders, such as corporations and local communities, to realize a Waste-Free Indonesia (Waste4Change, 2022).

c) Waste4Change's Accomplishments in Developing Waste Management Service Solutions

Waste4Change is a waste management firm that offers services in two areas: corporate waste management and individual waste management. Their services include pick-up of waste, provision of recycling bins, self-composting equipment, waste sorting, and education on the principles of Reduce, Reuse, and Recycle (3R). They have the capacity to handle up to 5,400 tons of waste through collaborations with numerous partners, including 1,700 households and major corporations. Waste4Change employs the Zero Waste to Landfill approach to achieve thorough and sustainable waste management, prior to its ultimate disposal in landfills (Agung, 2020).

4. Challenges Faced by Waste4Change in Food Waste Management

To achieve responsible waste management in Indonesia and establish a circular economy, numerous challenges must be addressed. Lax enforcement of laws has fostered a culture among Indonesians where they are more inclined to participate in environmentally detrimental garbage disposal practices. Furthermore, the expense of waste management is a concern, as waste retribution falls short of its initial objective.

Companies such as Waste4Change are compelled to partner with local governments in financing due to their constrained financial resources and infrastructure challenges. The issue of trash management in a vast region restricts the availability of individual waste management services to only a select few places. However, the intricate nature of the waste problem necessitates additional time and effort to address it effectively (Agung, 2020).

CONCLUSION

Waste4Change is a social enterprise that specializes in sustainable waste management services, with a particular focus on Indonesia.

Waste4Change has made diverse endeavors and contributions to accomplish Sustainable Development Goals (SDGs) 12 in West Java. SDGs 12 focuses on promoting sustainable patterns of consumption and production. The aims encompass waste management, waste reduction, and resource efficiency enhancement. Waste4Change has made efforts towards achieving these objectives by establishing a system to effectively manage environmentally-friendly garbage in the West Java region of Indonesia. Through the implementation of garbage collection, sorting, and management methods that prioritize environmental considerations. Implementing promotional campaigns to disseminate knowledge on garbage recycling, with the aim of enabling the local people in the West Java region to repurpose the waste they generate.

Implemented a range of initiatives with the goal of minimizing trash production in West Java. Through the implementation of a plastic usage awareness campaign and the #makantanpasisa campaign carried out in Bekasi. Disseminating information to the public regarding conscientious consumption behaviors. Establishing a collaborative collaboration with the local government, commercial sector, and other organizations to enhance trash management in West Java. This collaboration is anticipated to generate efficiency and influence. We are encouraging the community to actively participate in education initiatives and raise public awareness through campaigns that emphasize the significance of trash reduction, recycling, and resource efficiency.

Undoubtedly, Waste4Change has made noteworthy accomplishments. However, there are still challenges in the West Java region when it comes to implementing food waste management. The barriers encompass the inadequate infrastructure and technology required to facilitate efficient garbage management. The limited availability of labor, financial resources, and proper equipment support is impeding the expansion of food waste management in West Java. Waste4Change is committed to enhancing education and broadening relationships with parties involved in trash management. In order to garner additional assistance in enhancing the efficiency of sustainable food waste management in the West Java area, and maybe extend these efforts to encompass food waste management on a national scale in Indonesia.

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