

How Urban Communities Debate Waste: Learning from the CSR Agroeduwisata Jayakarta Program

Ni Made Ayu Wina¹, Yuliani², Fahruri Yahya³, Fatika Hastigerina Ananda⁴, Farina Ekarini⁵

¹CSR & ER Manager PT ANTAM Tbk UBPP Logam Mulia, Indonesia

²CSR & ER Junior Specialist PT ANTAM Tbk UBPP Logam Mulia, Indonesia

^{3,4}Community Development Officer Consultant PT ANTAM Tbk UBPP Logam Mulia, Indonesia

⁵CSR Admin PT ANTAM Tbk UBPP Logam Mulia, Indonesia

Email: admincsr.lm@antam.com

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Abstract. Several studies on waste issues in the Global South still echo a pessimistic voice about waste management. Few citizens of the Global South view waste not merely as dirty objects but as valuable residual resources. This single case study reveals something different. The waste management practices carried out by two urban community groups in East Jakarta, Indonesia, namely Kelompok Tani Hutan (KTH) of Rumah Kaum Jayakarta and Bank Sampah Pintar (BSP) of Pok Lisa in the Agroeduwisata Jayakarta Program, show that these groups have views and practices of waste management that are not only environmentally beneficial but also economically and culturally advantageous. This program was implemented and developed in collaboration with CSR PT ANTAM Tbk UBPP Logam Mulia. The findings of this study show that waste is treated not as dirty and damaged material but can instead be converted into gold. The practices carried out by the groups in this program align with the concept of sustainable city development.

Keywords: Agroeduwisata Jayakarta, Sustainable City, Urbanization, Waste.

A. INTRODUCTION

Waste is an integral issue of urbanization (Mesjasz-Lech, 2014, p. 245). Urbanization is defined as the migration of people from rural to urban areas and how cities are created (Brenner, 2014; Brenner and Schmid, 2015). Sometimes a city can be creatively formed, but on the other hand, it can be destroyed (Brenner, 2016). For example, cities act as economic engines, but their function generates waste. However, how waste, as an integral part of urbanization previously considered damaged and dirty, is transformed by urban communities into a residual resource that is valuable economically, environmentally, and even culturally.

Previously, various studies on waste management amid urbanization have been conducted. *First*, a study by Guibrunet, Calvet, and Broto (2017) investigated the flow of waste and garbage in Mexico through the urban metabolism approach. This approach allows viewing urban areas not within rigid administrative boundaries but as flows, where the relationship between urban communities and waste can be examined. *Second*, a similar approach was taken by Demaria and Schindler (2016) in New Delhi, India, where conflicts over waste management occurred. The implementation of waste-to-energy technology initiated by the government triggered conflicts because the appropriate technology to reduce waste ended up eliminating the livelihood of scavengers who rely on waste for their living.

Third, there is a study with a different approach conducted by Agata Mesjasz-Lech (2014) in Poland. The researcher investigated the trend of waste reduction between 2004 and 2012. However, according to her, this reduction trend cannot be proven as the main cause of waste reduction has not yet been found. On the other hand, the study found the rampant illegal dumping of waste in Poland. The waste reduction trend in that country is most likely caused

by people dumping waste in illegal dumping sites. *Fourth*, a comparative study on waste management in the Baltic states and some developing countries such as Brazil was conducted by Leal Filho et al. (2016). This comparative study also shows that waste management in developing countries has not yet reached the level of “waste recovery.” There are significant differences in how the citizens of the compared countries view waste, which affects how each treats waste.

Building on previous research, this study specifically refers to the direct views of the Kelompok Tani Hutan (KTH) of Rumah Kaum Jayakarta and the Bank Sampah Pintar (BSP) of Pok Lisa as urban communities in Jakarta, Indonesia, implementing the Agroeduwisata Jayakarta program as part of the Corporate Social Responsibility program of PT ANTAM Tbk UBPP Logam Mulia. This study aims to examine the uniqueness of the KTH of Rumah Kaum Jayakarta and the BSP of Pok Lisa in reshaping the waste-laden urban environment and transforming waste into something beneficial. The unique views and practices of KTH also support sustainable city development (Hodson and Marvin, 2014). Waste is not merely recycled but reintroduced into an economically beneficial circulation. This demonstrates that the KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa, as citizens of the Global South, also have a perspective on waste recovery as a valuable residual resource economically, environmentally, and culturally.

B. METHODS

This research is a single case study type (Gaya and Smith, 2016; Gustafsson, 2017). The selection of the single case study approach in this research is due to its suitability for a more precise and focused understanding of the views of individuals or a group. This approach is also chosen for its function, which is aimed at exploring the practices carried out by two urban community groups, namely Kelompok Tani Hutan (KTH) of Rumah Kaum Jayakarta and Bank Sampah Pintar (BSP) of Pok Lisa, in waste management that aligns with the concept of sustainable city development. To apply a study that aims to delve into the theoretical depiction of practice, especially those conducted by a group, the single case study approach is highly compatible (Dyer Jr and Wilkins, 1991). Therefore, in applying this approach, this study was conducted through in-depth interviews with KTH of Rumah Kaum Jayakarta, BSP of Pok Lisa, and various parties involved in the program such as CSR PT ANTAM Tbk UBPP Logam Mulia. Additionally, some documents including social mapping, program implementation, and social innovation documents, were used in the program document analysis to sharpen the understanding of the Agroeduwisata Jayakarta program’s implementation. Furthermore, a literature review of various relevant previous studies was also conducted to strengthen the arguments and data obtained in this study.

C. RESULTS AND DISCUSSION

1. Formation of KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa

Kelompok Tani Hutan (KTH) of Rumah Kaum Jayakarta is a community group that has existed since 2018 in the Jatinegara Kaum Subdistrict. This group conducts various organizational activities in an area of East Jakarta that faces crucial waste problems. According to the National Waste Management Information System (SIPSN) of the Ministry of Environment and Forestry (KLHK), in 2023, East Jakarta remains the city with the largest waste generation in the nation’s capital. East Jakarta generates 2,333.19 tons of waste per day, equivalent to 851,613.56 tons of waste per year. This data proves that East Jakarta is the largest contributor to the Integrated Waste Management Site (TPST) Bantar Gebang, Bekasi, West Java. The following data illustrates that East Jakarta is the city with the highest waste generation in the capital city, DKI Jakarta.

Table 1. Waste Generation in DKI Jakarta in 2023



Source: SIPSN KLHK (2024)

At its inception, KTH of Rumah Kaum Jayakarta operated in five areas, including 1) agriculture and fisheries; 2) environment; 3) research and development; 4) education; and 5) culture. In 2021, through social mapping conducted by CSR PT ANTAM Tbk UBPP Logam Mulia, two main issues were identified in the Jatinegara Kaum Subdistrict. First, 729 households in Jatinegara Kaum were living below the poverty line. Second, the population density in this area resulted in large amounts of waste, leading residents to frequently dispose of waste improperly in the river (Corporate Social Mapping Document, 2021).

Based on the problem mapping conducted by the company in 2021, a collaboration for program development was established between CSR PT ANTAM Tbk UBPP Logam Mulia and KTH of Rumah Kaum Jayakarta. The company assisted KTH of Rumah Kaum Jayakarta to develop a series of programs, which led to the creation of new integrated groups such as Bank Sampah Pintar (BSP) of Pok Lisa. Recently, in 2023, a new initiative group called MSME of Jaka established the MSME Corner in the Jatinegara Kaum Subdistrict.

Through this assistance and collaboration, KTH of Rumah Kaum Jayakarta which was initially founded out of members' concern for social, economic, and environmental issues, has been able to further develop its activities. With funding support and company assistance, KTH of Rumah Kaum Jayakarta developed a more integrated program with the BSP of Pok Lisa, called Agroeduwisata Jayakarta. There are four integrated activities under this program, including 1) cultural and religious tourism; 2) organic and inorganic waste management; 3) the development of creative economic groups through waste banks and waste saving; and 4) the formation of Joint Business Groups (Kelompok Usaha Bersama/KUBE).

The activity integration within the program aims to address waste management issues, including waste generation, flood and disease risks, and economic issues such as poverty and unemployment, which are still prevalent in Jatinegara Kaum. The main objective of the program is to transform waste that was previously viewed as useless and harmful, into an economically and environmentally beneficial residual resource. This is critical because waste has been one of the most complex problems in East Jakarta that is almost impossible to control and resolve. The complexity of the waste problem in East Jakarta can be seen from the waste generation trend data from 2019 to 2023, as follows:

Table 2. Waste Generation Trend in East Jakarta in 2019 – 2023



Source: SIPSN KLHK (2024)

According to SIPSN KLHK data, there was almost no reduction in waste generation from 2019 to 2023 in East Jakarta. This waste was generated from the accumulation of dense industrial activities, high purchasing power of the local community, and rapid population growth in Jakarta (Surjandari, Hidayatno, and Supriatna, 2009). Given this reality, efforts to reduce the quantification of waste generation are extremely challenging. Waste has become an integral part of urban life, especially in East Jakarta. Therefore, efforts to merely reduce the quantification of waste generation are essentially insufficient.

At this point, KTH of Rumah Kaum Jayakarta holds a more advanced view and objective by recognizing waste as an unavoidable daily issue. They subsequently transform it into something more valuable both economically and environmentally. However, KTH of Rumah Kaum Jayakarta's efforts to achieve this are not without obstacles. KTH of Rumah Kaum Jayakarta cannot stand alone in resolving the complex waste problem in Jatinegara Kaum. The following sections will further clarify how KTH of Rumah Kaum Jayakarta implements the Agroeduwisata Jayakarta Program to address waste management issues and economic problems in Jatinegara Kaum.

2. Implementation of the Agroeduwisata Jayakarta Program

Broadly, the Agroeduwisata Jayakarta Program integrates four simultaneous activities, including religious tourism, organic and inorganic waste management, Bank Sampah Pintar, and the development of joint business groups. These activities are practically aligned with the concept of sustainable urban development (Mesjasz-Lech, 2014; Pearson, Newton, and Roberts, 2014). This is evident from the program's spirit of addressing waste issues not merely focusing on "recycling." Instead, waste is sorted, transformed, restored, and reintegrated into the economic circulation. To examine these practices more closely, each activity within the integrated program is detailed in this subsection.

The first activity is the management of organic and inorganic waste. The primary objective of this activity is to change people's perceptions and treatment of waste. Traditionally, waste as a byproduct of urban life and economic processes is viewed as dirty, damaged, and useless, thus only fit for disposal. However, the KTH of Rumah Kaum Jayakarta counters this view and practice. As a community group in Jatinegara Kaum, they actively initiate the movement to sort organic and inorganic waste. Once separated, organic waste is placed in a designated area to be decomposed by natural creatures that are also cultivated, such as maggots. Additionally, organic waste that cannot be decomposed by maggots is turned into compost.

The second activity is the Bank Sampah Pintar (BSP) of Pok Lisa. This activity aims to raise community awareness about inorganic waste management while gradually changing the local perception that waste is a valuable resource. Waste management turns waste into a way to generate revenue, rather than just being an excess of the city's role as an economic engine (Leal Filho et al., 2016). The Bank Sampah Pintar of Pok Lisa activity is essentially an extension of the inorganic waste sorting activity. Inorganic waste is sorted not only to be recycled into useful items for resale but it can also be turned into gold.

The economic value chain of waste in Jatinegara Kaum does not stop at the sorting process and its conversion into gold. In the hands of KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa, waste becomes even more profitable when the knowledge of its management is disseminated to more people. Therefore, the subsequent development program by these two groups is the establishment of a joint business group (KUBE). The more profitable opportunities found in sorting and recovering waste, the more activities emerge, including the relatively new KUBE development activity. The background of KUBE stems from the potential of residents who were enthusiastic about selling business products but only did it on an

individual basis. These business product sales activities were also unorganized and did not meet quality sales standards.

Finally, CSR PT ANTAM Tbk UBPP Logam Mulia recognized the significant potential and subsequently assisted by promoting various capacity-building activities such as product packaging training, product marketing management training, and hygienic product processing training. From the various training sessions conducted, a new group of 20 individuals has been formed, known as the MSME of the Jaka group. This group then initiated the establishment of an inclusive space to accommodate MSMEs in Jatinegara Kaum, named MSME of Jaka. The projection for this MSME group in the future is that joint business activities can be directly linked to the creation of recycled waste products into marketable MSME products.

In addition to the MSME group projected to connect with the creation of recycled waste products into MSME products, the existence of MSME of Jaka is also intended to disseminate entrepreneurial knowledge in Jatinegara Kaum. The presence of the MSME Corner is also expected to support the fourth activity of the Agroeduwisata Jayakarta Program, i.e. cultural and religious tourism. Cultural and religious tourism is one of the distinctive and interesting activities of the program because of the significant entrepreneurial potential of the residents of Jatinegara Kaum as well as the potential for cultural and religious tourism. In Jatinegara Kaum, there is a tomb of Prince Jayakarta, one of the most famous figures in Jakarta. This figure is also immortalized in the historical names of Jakarta, such as Jayakarta, Jakerta, and Jaketra (Lauder and Lauder, 2017). The immortalization of these names is related to the role of Prince Jayakarta in his resistance against colonial rulers in the past.

Therefore, linking cultural and religious tourism with knowledge about waste management is not without basis. There is an underlying purpose of instilling love and awareness of environmental sustainability values through religious and cultural channels (Johnston, 2014; Ives and Kidwell, 2019). The challenges faced in Jakarta today may not be like the resistance against colonizers in the past, but environmental issues such as waste accumulation. This reinforces the idea that cultural and religious tourism activities are packaged together with other activities like fun learning. Fun learning activities are conducted to disseminate knowledge about environmental love, such as understanding and managing organic and inorganic waste in an enjoyable manner. These activities are ultimately expected to become channels of knowledge for residents and tourists to be aware of the various environmental problems they must address in Jakarta today.

Theoretically, the Agroeduwisata Jayakarta Program is not envisioned as an initiative in the middle of Jakarta that would contribute to sustainable urban development (Pearson, Newton, and Roberts, 2014; Estevez, Lopes, and Janowski, 2016). However, in practice, the efforts of KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa, currently supported by the collaboration with CSR PT ANTAM Tbk UBPP Logam Mulia, have led to the emergence of initiation groups like MSME of Jaka. This practice reflects efforts aligned with the concept of sustainable cities, particularly in terms of partnerships. Initially, the existence of these urban community groups in Jakarta arose from the concerns of the members regarding numerous social, economic, and environmental issues they faced. Subsequently, to address these interconnected issues, both groups focused on the problem of waste generation.

The massive waste accumulation, reaching over 3 tons daily in East Jakarta, must be addressed. Addressing the waste issue cannot be managed with sectoral solutions, such as focusing solely on environmental solutions. Economic and social solutions must also be considered. The waste generated by urban economic functions (Mesjasz-Lech, 2014) is nearly impossible to manage by halting ongoing economic processes. This is why the Agroeduwisata Jayakarta Program has not confined itself to waste sorting and recovery activities that solely contribute to the environment. Instead, these activities are driven to contribute economically.

Theoretically, this is referred to as circular economic activities leading to circular ecology (Adami and Schiavon, 2021).

3. KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa's Perceptions on Waste

A comparative study on waste issues conducted by Leal Filho et al. (2016) in Baltic countries and several developing countries, particularly Brazil, revealed an interesting finding regarding people's perceptions of waste. According to their findings, there are two distinct perceptions between people in the Baltic countries and developing countries like Brazil about waste. In developing countries like Brazil, waste is not regarded as a valuable resource to be managed. This perception is also held by local government officials, resulting in waste management policies not being a priority. Additionally, the local government lacks specific waste management legislation. Moreover, community-based waste management knowledge and awareness are also minimal.

Contrary to the previous research, this study on two urban community groups, KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa, which manage waste and operate a waste bank in Kaum Subdistrict, East Jakarta, shows contradictory findings to Leal Filho et al. (2016). The practices of these two groups demonstrate that in the Global South, particularly in Indonesia, some groups do not merely view waste as dirty and useless. Instead, they view waste as something valuable, even having economic and environmental value.

The awareness and knowledge of these two groups are not given instantly. This awareness arises from the most crucial issues in the areas where the group members reside, which are burdened with massive waste accumulation. This awareness is similar to Erik Andersson's (2006) statement in his article titled "Urban Landscapes and Sustainable Cities," which posits that a city is significantly influenced by human activities, and decisions about the city's management have substantial implications for the ecosystem's functions. The massive waste accumulation, a daily issue for the residents of Jatinegara Kaum, spurred both groups to find solutions and ways out of the complex waste problem, rather than getting stuck in the waste issue.

Initially, KTH of Rumah Kaum Jayakarta believed that the waste problem in their area would be resolved once awareness and knowledge about the environmental impacts of waste were addressed, particularly through the management of organic and inorganic waste. People who previously discarded waste directly into disposal sites or even into river streams were now able to segregate organic and inorganic waste before disposal. In the early stages of this practice, the relatively small KTH of Rumah Kaum Jayakarta, compared to the overall population, remained the most active group in waste sorting.

At the outset, KTH of Rumah Kaum Jayakarta had to demonstrate to the surrounding residents that organic waste sorting through maggot cultivation and composting was feasible. This proof succeeded in attracting 33 residents of Jatinegara Kaum to join the group. By 2023, when organic waste sorting through maggot cultivation and composting proved to be not only environmentally beneficial but also economically advantageous, the membership of KTH of Rumah Kaum Jayakarta increased to 47 individuals. In that year, compost sales reached 1,620 kg per year. The waste sorting process, which also served as a means for members to generate income, continued to be appealing as it proved environmentally and economically beneficial.

Learning from this case, the concept of circular ecology, manifested in the consistent management of organic waste, gained more interest and appeal among residents when directly linked to the circular economy (Sharma et al., 2021). This reality is not negative; rather, the practice of waste management and sorting that can reach economic aspects aligns perfectly with sustainable urban development. Waste is not merely recycled but maximized to be reintegrated into the economy, benefiting many people (Romero-Hernández and Romero,

2018). This practice aligns with the recommendations of Pasang, Moore, and Sitorus (2007) in their article “Neighbourhood-Based Waste Management: A Solution for Solid Waste Problems in Jakarta, Indonesia,” which suggests that Jakarta’s severe waste problem can be partially addressed through household-level waste management.

Although the study mentioned conveys a pessimistic view of Jakarta’s severe and crucial waste problem, it offers a glimmer of hope amidst the primarily structural nature of waste accumulation. In essence, the waste issue is not an isolated problem but is connected to other issues such as pollution, disease, and flooding (Van Voorst, 2016). Nevertheless, amidst the structural waste problem, various feasible efforts must be undertaken to address the waste issue. Even though household-level waste management does not tackle structural issues, it is still necessary and should be pursued. Such efforts can at least slow down the worsening waste accumulation problem in Jatinegara Kaum from year to year.

This belief is held by KTH of Rumah Kaum Jayakarta, prompting them to develop various activities to attract more residents to care about segregating organic and inorganic waste. Specifically, KTH of Rumah Kaum Jayakarta has traditionally concentrated on the segregation of organic waste. Over time, to engage more residents in sorting inorganic waste, KTH of Rumah Kaum Jayakarta initiated the formation of an integrated group called Bank Sampah Pintar (BSP) of Pok Lisa. This group specifically focuses on the practice and campaign of sorting inorganic waste, which is economically and environmentally beneficial.

Through BSP of Pok Lisa, many residents have joined as waste-saving customers. The waste that is processed and collected can be converted into gold. The perception of waste as dirty and worthless material was transformed into something of economic value—gold—due to the collaboration between BSP of Pok Lisa and CSR PT ANTAM Tbk UBPP Logam Mulia. In 2023, BSP of Pok Lisa experienced significant growth due to corporate CSR funding, which facilitated the digitalization of BSP, enabling residents beyond Jatinegara Kaum, across provinces, to become customers. This means that awareness of sorting inorganic waste, rather than discarding it indiscriminately, has been expanding. People are increasingly interested in sorting waste because the process proves economically rewarding.

Broadly speaking, KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa show that amidst the complex and critical waste problems in East Jakarta, waste can be treated as a valuable resource rather than just garbage. This effort requires a considerable amount of time. It also demands creative strategies to ensure consistent waste management and sorting processes, which can reach a broader population.

4. The Uniqueness of KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa in Waste Management

According to a social mapping conducted by CSR PT ANTAM Tbk UBPP Logam Mulia in 2021 in Jatinegara Kaum Subdistrict, issues as critical as waste problems include poverty and unemployment. In the area, many people are found to live below the poverty line and are even unemployed. This reality was notably prevalent during the COVID-19 pandemic. Many employers in various places, especially in Jakarta, terminated employment, increasing unemployment (Rahman et al., 2021). In Jatinegara Kaum specifically, the phenomenon of job terminations leading to increased unemployment resulted in more individualistic behavior among people.

Ultimately, the introduction of CSR programs during the pandemic provided hope for residents living in poverty and unemployment to have activities and regain income. According to the 2023 Social Innovation Company Document, residents who joined KTH of Rumah Kaum Jayakarta could earn an income of IDR 305,569.00 per month, with the group’s total annual income amounting to IDR 108,205,000.00.

Joining KTH of Rumah Kaum Jayakarta or BSP of Pok Lisa is not a difficult matter. Both groups are highly inclusive. The more waste sorted and collected, the greater the economic benefits. There are no specific criteria for joining these groups. In practice, waste management and sorting activities, as well as the waste bank savings, have attracted previously unemployed individuals, providing them with activities and income. Moreover, elderly residents often stigmatized as no longer capable of productive work, are still welcome to participate in waste sorting activities and waste savings.

For elderly residents, their reason for joining waste sorting and savings activities is not solely to earn income. At their advanced age, self-confidence tends to diminish. Participating in waste sorting and savings activities to earn income helps restore their self-confidence. There is no disadvantage for the group or other residents when elderly people join waste sorting and the waste bank, which are part of the Agroeduwisata Jayakarta Program. The more people who sort waste, the greater the benefits. Additionally, the awareness of waste as something valuable and economically beneficial continues to spread widely.

Regarding the dissemination of knowledge about the importance of waste segregation, KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa, in collaboration with corporate CSR initiatives, have their unique approach to practicing this dissemination. To spread knowledge about waste management, agricultural techniques, and horticultural planting, both groups organize fun learning sessions packaged together with religious and cultural tourism. These fun learning activities aim to foster “earth guardians” in Jatinegara Kaum Subdistrict. The fun learning sessions target the people who visit Jatinegara Kaum Subdistrict for tourism and specifically focus on school-aged children. At this point, it is evident that the practices carried out by KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa are inclusive of all ages. The dissemination of knowledge about waste management, agriculture, and environmental conservation is also supported by the KTH of Learning Center, which serves as a hub for environmental and waste management education.

From this subsection, it can be inferred that to engage people in waste segregation, the practice must not only provide environmental benefits but also directly relate to basic needs, such as income generation (Karpman, Zuckerman, and Gonzalez, 2018). A profitable circular economy will directly relate to and impact a circular ecology (Romero-Hernández and Romero, 2018; Adami and Schiavon, 2021). Although, upon deeper examination, basic needs might not always be the primary motivation for some individuals participating in waste segregation and waste banking.

For instance, elderly residents may join the activities organized by KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa not entirely for economic reasons to earn income from waste. Instead, their participation is often motivated by cultural reasons (Sahlins, 1962, 2013). People’s actions are sometimes driven not solely by economic reasons but also by non-economic factors. Elderly residents involved in waste segregation and waste banking participate more to regain their self-confidence. They seek to counter the stigma of being perceived as non-productive, a label often attached to their increasingly frail bodies.

This motivation can also be observed among previously unemployed residents. During the COVID-19 pandemic, waste segregation and waste banking activities did not only provide economic appeal to the unemployed. These activities also offered a way for unemployed individuals to regain their self-confidence, allowing them to become active and earn an income as previously. Therefore, waste, traditionally seen as dirty and worthless, is found in this study to hold both economic and cultural value. This finding contrasts with several previous studies by Guibrinet, Calvet, and Broto (2017); Demaria and Schindler (2016); Agata Mesjasz-Lech (2014); and Filho et al. (2016), which predominantly viewed waste from a socio-economic perspective. However, these studies have not touched on cultural aspects.

The religious tourism offered by KTH of Rumah Kaum Jayakarta, which includes visits to the tomb of Prince Jayakarta in Jatinegara, is beneficial for both tourists and pilgrims. According to research conducted by Suprasetio (2020), after visiting or making a pilgrimage to the tomb of this historically significant figure in Jakarta's past, pilgrims exhibit increased tolerance, heightened sensitivity to their surroundings, and a greater inclination to protect the environment. Therefore, the connection between religious values and environmental awareness has become an undeniable reality. Religion serves as an effective channel for instilling values of care, maintenance, and environmental awareness, including how people address waste issues.

5. Practices of KTH of Jayakarta and BSP of Pok Lisa in Sustainable Urban Development

The preceding sections have been explained that waste is not merely seen as damaged and dirty material; it holds significant economic, environmental, and cultural value for human life. Waste, as a byproduct of urban economic functions, has historically created a divide between urban societies and their environments (Forman, 2014). Therefore, transforming waste from a dirty object into something valuable economically, environmentally, and culturally is also a political effort to reconnect urban societies with their environments (Cornea, Véron, and Zimmer, 2017). This section will elaborate on how the practices of KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa in waste segregation and waste banking contribute to sustainable urban development (Hodson and Marvin, 2014; Estevez, Lopes, and Janowski, 2016).

One of the main premises of sustainable urban development, according to Mesjasz-Lech (2014), is that environmental mitigation practices should not rely solely on technical solutions. This premise is based on the lower costs associated with mitigating environmental issues without emphasizing functional replacement through various technical solutions. If observed closely, the practices implemented by KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa, such as segregating waste and converting it into gold or selling it, do not fall under the category of mitigating environmental issues through functional replacement with technical solutions.

Waste issues are inherently tied to the relationship between humans and the urban environment (Moore, 2014). When human actors strive to improve the environment with their efforts, the likelihood of addressing issues sustainably increases. Essentially, the issue of waste generation as a byproduct of the economic activities of the residents of Jatinegara Kaum Subdistrict, for example, would be more challenging to address through various incompatible and impractical technical solutions. For instance, managing waste with advanced waste processing equipment that residents cannot access may be possible but is difficult to realize. Such solutions require substantial financial resources, which many residents of Jatinegara Kaum, who live below the poverty line, do not have.

The issue of waste is inextricably linked to the relationship between humans and the urban environment (Moore, 2014). When human actors attempt to improve the environment using their capabilities, the likelihood of addressing the issue sustainably increases. Essentially, the problem of waste generation, as an excess from the economic activities of residents in Jatinegara Kaum, for instance, will be more challenging to resolve through various technical solutions that are incompatible and infeasible for them to implement. For example, addressing the waste problem using advanced waste processing equipment, which they cannot access, maybe a solution, but it is very difficult to realize. They would require substantial financial resources to achieve this, whereas the majority of Jatinegara Kaum residents live below the poverty line.

At this point, the practices carried out by KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa, which aim to mitigate the waste generation problem through waste segregation and promoting waste banks, are highly suitable for implementation in Jatinegara Kaum. These practices reflect sustainable urban development (Hodson and Marvin, 2014), as the low-cost environmental mitigation applied to address waste generation aligns with their financial resources and utilizes their labor. It is not surprising that the program has been ongoing since 2018 and continues to this day. Additionally, the factor of partnerships contributes to the continuous development of the Jayakarta Agroedutourism Program. It is highly relevant to the premises and characteristics of other sustainable urban development features (Ogutu, Kimata and Kweyu, 2021).

Before partnering with CSR PT ANTAM Tbk UBPP Logam Mulia, KTH of Rumah Kaum Jayakarta was limited to waste segregation activities and had not yet considered how waste could be creatively repurposed and converted into gold. With the network and partnership with PT ANTAM Tbk UBPP Logam Mulia, the view that waste could become something economically and culturally valuable began to materialize. This led to the initiation of an integrated group with KTH of Rumah Kaum Jayakarta, namely the Bank Sampah Pintar of Pok Lisa. At this point, the partnership practices with companies carried out by KTH of Rumah Kaum Jayakarta reflect sustainable urban development. A characteristic of partnership practices that mirrors the concept of sustainable cities is when partnerships with various parties create a shared action platform (Ogutu, Kimata and Kweyu, 2021).

CSR PT ANTAM Tbk UBPP Logam Mulia, as a precious metal processing company, can provide knowledge and ideas on how segregated inorganic waste can be converted into gold. The company's CSR also contributes by encouraging BSP of Pok Lisa to digitize the Bank Sampah Pintar, thus expanding the customer base to surrounding areas and even across provinces. At this point, the function of the partnership not only makes the programs implemented by KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa more developed but also sustainable (Stan, 2014). Moreover, the public-private partnership process that continuously develops the group is also aligned with the next basic premise of the sustainable urban development concept, particularly in waste management by rethinking the meaning of recycling.

Recycling has become a mainstream solution to address the waste problem. However, it is rarely questioned whether this solution is sustainable in addressing the waste generation issue. Andersson and von Borgstede's (2010) study, titled "Differentiation of Determinants of Low-Cost and High-Cost Recycling," reveals the practice of low-cost and high-cost waste recycling. The concept of recycling waste as a solution to the waste generation issue is highly feasible, but it sometimes cannot be realized due to the high cost of recycling. This is why, in the basic premise of sustainable urban development, particularly related to urban waste issues, recycling is a solution that is continuously re-evaluated.

This re-evaluation arises because recycling can sometimes be inappropriate. The cost of recycling waste can be higher than the economic and environmental benefits (Ferreira et al., 2008). Therefore, the logic of recycling is almost not considered in the concept of sustainable urban development. It tends to emphasize neutralization, as seen in the waste burial process (Mesjasz-Lech, 2014). In this process, waste tends to be eliminated rather than restored. The effects of waste burial are also highly detrimental to the environment as they can contaminate water and soil (Thanh and Matsui, 2013). In the concept of sustainable urban development, waste generation is encouraged to be restored into something more valuable and reintroduced into the economy.

The next basic premise of sustainable urban development aligns with the practices that have been applied by KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa. KTH of Rumah

Kaum Jayakarta, which focuses more on organic waste segregation, does not engage in recycling practices that lead to waste burial. However, the group creatively segregates waste with the help of maggots as natural decomposers of organic waste. Maggot farming is a process of restoring waste without eliminating its economic value chain. Maggots that have been farmed and fed with natural organic waste can be sold and economically beneficial.

Furthermore, organic waste can also be restored when processed into compost. The sale of organic waste that is segregated and restored into compost has market value. Group members who consistently segregate organic waste into compost will certainly earn income from this process. It is hoped that the residents of Jatinegara Kaum, who still live in poverty or are unemployed, can participate in this waste segregation process to earn income and improve their economic conditions. In this segregation logic, waste generation ceases to be a threat to life and the environment and instead becomes a beneficial resource.

In addition, the practices carried out by BSP of Pok Lisa involve converting waste into gold. The logic of converting waste into gold is also relevant to that of segregation, which aligns with the concept of sustainable cities. In the minds of those who believe that waste can be converted into gold, waste will not be immediately discarded into landfills. Instead, people will think creatively to segregate it. Organic waste will be channeled to KTH of Rumah Kaum Jayakarta, while inorganic waste can be saved as deposits in BSP of Pok Lisa. This means that residents do not apply and use the logic of landfilling, as seen in the recycling logic, which tends to neutralize waste. Instead, the surrounding residents practice the logic of waste segregation.

Furthermore, residents do not perceive waste as a problem but as a valuable and profitable resource. Every day, they can generate waste, indicating that they can save little by little to eventually convert it into gold. If considered more carefully, this concept might contradict the zero-waste logic. However, considering the waste problem in East Jakarta, where the trend of waste generation reduction from 2019 to 2023 has almost not occurred and cannot be expected, the transformation of urban development towards a zero-waste city becomes very challenging. Nonetheless, the logic of waste segregation to be reintegrated into economic circulation is still highly feasible.

This practice increasingly becomes an effort imbued with optimism for the future, especially when understanding the study conducted by Zaman and Lehmann (2011) in their paper titled "Urban Growth and Waste Management Optimization Towards 'Zero Waste City'". These researchers studied two cities in the Global North, i.e., Adelaide and Stockholm. These cities do not experience significant waste generation issues. Therefore, the government and the city's residents are optimistic about transforming into zero-waste cities. However, this transformation process still faces many obstacles, such as the various tools, systems, and technologies used to achieve zero-waste cities ultimately being ineffective and unaffordable.

Therefore, the practices carried out by KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa, amidst the colossal waste generation issue in East Jakarta, can be said to not address the structural problems regarding waste and are still far from the vision of becoming a zero-waste city. However, in the practice of waste processing and segregation that does not require significant financial resources and expensive advanced equipment, this program implementation is considered effective and sustainable.

D. CONCLUSION

The issue of massive waste accumulation, reaching more than three tons per day in East Jakarta, Indonesia, is being transformed into a valuable resource with economic, environmental, and cultural benefits by two community groups: Kelompok Tani Hutan (KTH) of Rumah Kaum Jayakarta and Bank Sampah Pintar (BSP) of Pok Lisa. These groups have

partnered with CSR PT ANTAM Tbk UBPP Logam Mulia to address the critical waste problem in their area by developing their efforts and activities. As a result of this collaboration, these groups now run the Jayakarta Agro-Edu tourism Program, which comprises four activities: the processing of organic and inorganic waste, the operation of Bank Sampah Pintar and waste savings, the development of joint business groups, and the provision of cultural and religious tourism packages.

These integrated activities aim to address the primary issue of unavoidable waste in Jatinegara Kaum Subdistrict. Rather than continuing to be mired in the problem of household waste accumulation, these groups continually seek solutions to manage daily household waste. Specifically, KTH of Rumah Kaum Jayakarta focuses on the segregation of organic waste to produce compost or separate it with the help of natural maggots. This process of organic waste segregation is not only environmentally beneficial but also economically advantageous. Maggots cultivated by feeding on organic waste can be processed and sold, while compost produced from organic waste also holds significant market value.

BSP of Pok Lisa, which concentrates on the segregation of inorganic waste, runs a Bank Sampah Pintar that encourages residents and even those from neighboring provinces to save waste that can be converted into gold. Inspired by KTH of Rumah Kaum Jayakarta's initiatives, many people are motivated to segregate and recycle waste due to its environmental and economic benefits. These two groups in Jatinegara Kaum have effectively integrated circular economy principles with circular ecology practices. The economic appeal has grown as the two groups have spurred the formation of a relatively new joint business group, the MSME of Jaka group. Additionally, to spread knowledge about the importance of waste management and environmental conservation, they offer cultural and religious tourism packages to attract more people to gain this awareness.

Research on the benefits of religious tourism at the tomb of Prince Jayakarta indicates a link between this form of tourism and the rise in environmental awareness among visitors. The overall practices carried out by KTH of Rumah Kaum Jayakarta and BSP of Pok Lisa in partnership with CSR PT ANTAM Tbk UBPP Logam Mulia reflect and align with the principles of sustainable urban development. *Firstly*, the groups mitigate the waste problem without replacing this mitigation function with technical solutions. The waste issue, integral to the lives and economy of Jatinegara Kaum residents, is addressed through their efforts and initiatives. *Secondly*, to ensure these mitigation efforts are sustainable, the groups formed partnerships with other entities, including CSR PT ANTAM Tbk UBPP Logam Mulia. This partnership has resulted in a collaborative action platform and innovations, including transforming previously worthless waste into valuable items that can be converted into gold.

Thirdly, the premise of sustainable urban development that aligns with the groups' waste management practices is the logic of segregation rather than recycling. The practice of segregating organic and inorganic waste by the groups and the broader community is not based on the logic of neutralization, where waste is recycled and then landfilled, which tends to be environmentally harmful. Instead, waste is segregated and restored to re-enter the economic cycle. This reintegration of recycled waste into the economic cycle is the fourth premise of sustainable urban development, particularly concerning waste management. Waste is not recycled merely to be eliminated but is segregated and restored to be reintroduced as economically, environmentally, and even culturally beneficial.

Waste as a valuable residual resource also emerges in the inclusive activities of waste segregation and conversion into gold. Elderly residents, previously viewed as unproductive, have regained their self-confidence through waste-processing activities. Additionally, residents living below the poverty line and unemployed individuals have gained income and acceptance back into their families and communities by participating in waste management and savings

activities. Therefore, people are sometimes drawn to waste segregation not solely for the economic benefits but also for non-economic, culturally significant reasons.

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