



# INSPIRING STORIES OF COMMUNITY-BASED WASTE MANAGEMENT:

SHARING EXPERIENCES ACROSS INDONESIA  
VIA PARTICIPATORY ACTION RESEARCH









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# ACRONYM

<b>APIK</b>	INDONESIAN WOMEN'S ASSOCIATION FOR JUSTICE
<b>ASOBSI</b>	INDONESIAN WASTE BANK ASSOCIATION
<b>BKKBN</b>	THE NATIONAL POPULATION AND FAMILY PLANNING BOARD
<b>BSA</b>	WASTE BANK ASSOCIATION
<b>BSI</b>	MAIN WASTE BANK
<b>BSU</b>	WASTE BANK UNIT
<b>B2B</b>	BUSINESS TO BUSINESS
<b>B2C</b>	BUSINESS TO CONSUMER
<b>CAPEX</b>	CAPITAL EXPENDITURE
<b>DPRD</b>	REGIONAL PEOPLE'S REPRESENTATIVE COUNCIL
<b>HDPE</b>	HIGH-DENSITY POLYETHYLENE
<b>KASGOT</b>	MAGGOT RESIDUE
<b>KPC</b>	CILIWUNG CARE COMMUNITY
<b>KWT</b>	WOMEN FARMERS GROUP
<b>LDPE</b>	LOW-DENSITY POLYETHYLENE
<b>MOU</b>	MEMORANDUM OF UNDERSTANDING
<b>NYIMAS</b>	STORING GOLD
<b>OPEX</b>	OPERATIONAL EXPENDITURE
<b>PERDA</b>	REGIONAL REGULATION
<b>PKK</b>	FAMILY WELFARE EMPOWERMENT
<b>POSYANDU</b>	INTEGRATED HEALTH SERVICE POST
<b>PP</b>	GOVERNMENT REGULATION
<b>PPKM</b>	ENFORCEMENT OF RESTRICTIONS ON COMMUNITY ACTIVITIES
<b>PPOB</b>	PAYMENT POINT ONLINE BANKING
<b>PSC</b>	PLASTIC SMART CITIES
<b>RT</b>	NEIGHBORHOOD UNIT
<b>RW</b>	COMMUNITY UNIT
<b>R&amp;D</b>	RESEARCH AND DEVELOPMENT
<b>SD</b>	ELEMENTARY SCHOOL
<b>SDIT</b>	ELEMENTARY ISLAMIC SCHOOL
<b>SK</b>	DECREE
<b>SKPD</b>	REGIONAL INSTRUMENT WORK UNIT
<b>TPA</b>	FINAL DISPOSAL SITE
<b>TPS</b>	TEMPORARY WASTE DISPOSAL SITES
<b>UPS</b>	WASTE PROCESSING UNIT
<b>WIB</b>	WESTERN INDONESIA TIME
<b>WWF</b>	WORLD WIDE FUND FOR NATURE
<b>YAPIS</b>	ISLAMIC EDUCATION FOUNDATION
<b>3R</b>	REDUCE – REUSE – RECYCLE
<b>5P</b>	STRENGTHENING STUDENT PANCASILA PROFILE PROJECT

# INSPIRING STORIES OF COMMUNITY-BASED WASTE MANAGEMENT:

SHARING EXPERIENCES ACROSS INDONESIA VIA PARTICIPATORY ACTION RESEARCH

Gunung Emas Waste Bank • Kumala Main Waste Bank  
Recycling Village • Kenanga Waste Bank Unit  
Bersih Istiqomah Waste Bank • Rekam Nusantara  
Satgas Ciliwung Kota Bogor • Rumah Harum Main Waste Bank  
Annisa Waste Bank Unit • Rappo Indonesia

These stories are written using Participatory Action Research where community leaders are engaged to craft their own narratives. Born from real experiences and deep knowledge, these stories represent actionable agendas that transcend mere conceptualization.



Working with cities worldwide to  
keep plastic out of nature by 2030

## INTRODUCTION

**PSC IS NOT JUST  
A CONCEPT, BUT  
AN ACTION AGENDA  
SUPPORTED BY  
REAL EXPERIENCES  
AND DEEP  
KNOWLEDGE.**



**IRFAN BAKHTIAR**  
CLIMATE AND MARKET TRANSFORMATION DIRECTOR  
WWF-INDONESIA

The initiative and role of the community in handling waste need to be acknowledged, especially in waste management, an issue that seems to never end. Every effort to strengthen these initiatives and roles is guaranteed to have ‘struggle’ stories that can be both personal and collective within the community. Including waste banks, NGOs, and communities that are partners of Plastic Smart Cities (PSC), addressing the issue of plastic waste is a great action that needs to be documented.

WWF-Indonesia through the Plastic Smart Cities (PSC) project presents inspiring stories that are stitched together into a narrative of best practices, which can serve as reflective lessons for the actors and, at the same time, develop their potential for the learning of other community groups in building efforts to handle plastic waste. As a process, these inspiring stories are also the result of strong collaboration between WWF-Indonesia and its partners, who are committed to providing examples of best practices in addressing the increasingly worrying problem of plastic waste leakage into the environment.

PSC is not just a concept, but an action agenda supported by real experiences and deep knowledge. Through the experiences captured in this document, the PSC team together with its partners have managed to make inspiring stories and best practices that are hoped to be replicated by other cities in Indonesia and other parts of the world.

In this document, readers will be presented with a holistic view of various cross-sectoral collaboration concepts capable of bringing significant changes in efforts to reduce plastic waste leakage into the environment, creating more sustainable cities.

Meanwhile, in the context of the global challenges faced by humanity, issues such as global warming and plastic pollution continue to emerge as crucial points that demand immediate attention. Their locally felt impacts are relevant to what waste banks, NGOs, and communities strive for in handling plastic waste. The local efforts are expected to contribute to the global narrative in advocating for the enjoyment of the right to a good, healthy, clean, and sustainable environment.

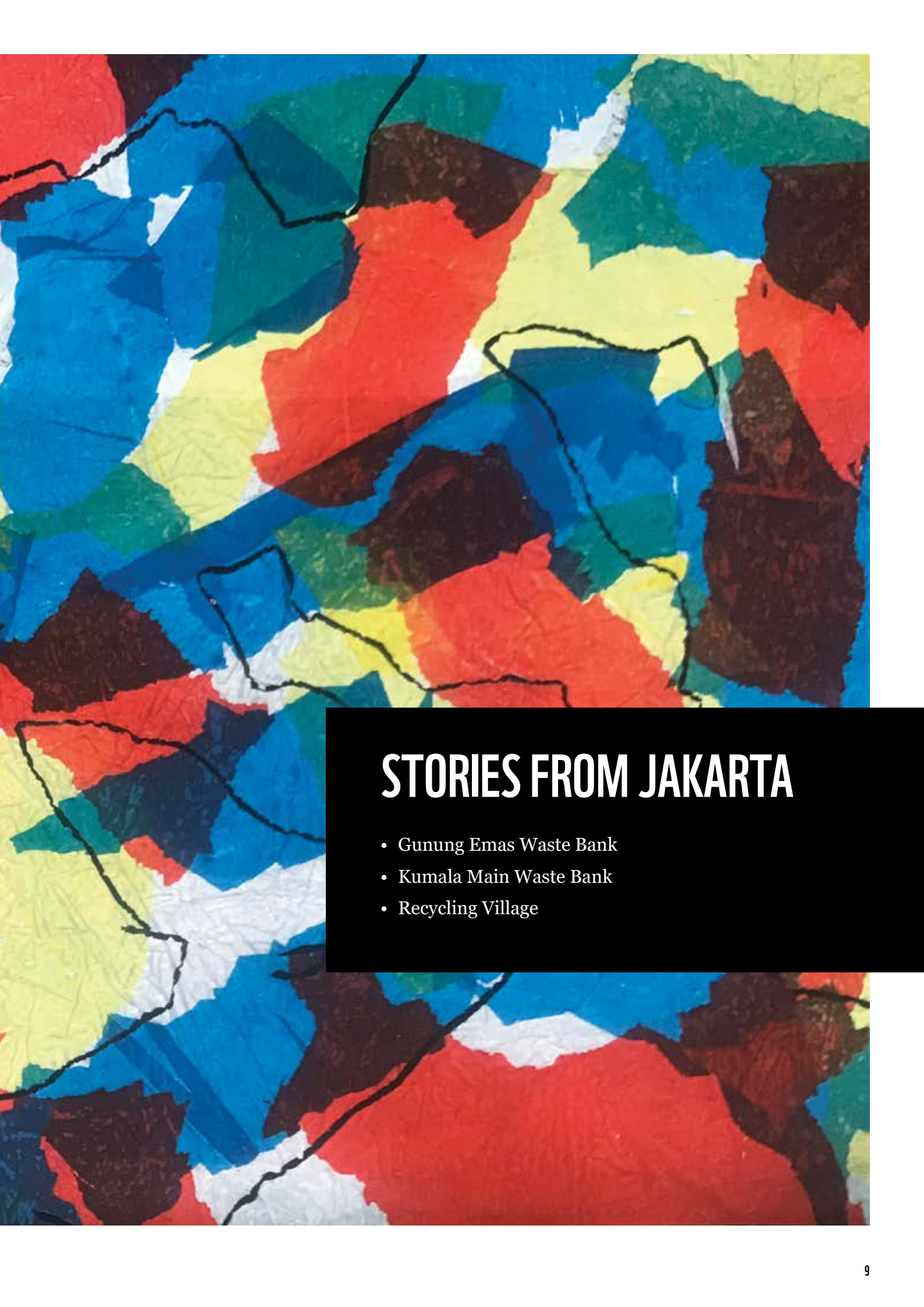
In conclusion, allow me to express my gratitude to all parties who have contributed to the writing effort, especially to the PSC team and its partners. Without the support and strong commitment of all parties, this achievement might not have been beautifully documented.





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# STORIES FROM JAKARTA

- Gunung Emas Waste Bank
- Kumala Main Waste Bank
- Recycling Village

# SAVE FIRST, WASTE BANK LATER

The initial idea arose accidentally one day in early 2014. Vera Novita was on her way to her office, Radio Gaya FM, when she passed by her neighbour's house mourning the loss of their parents. Despite working at a large company, few of her colleagues came to offer condolences.

The scene stirred her awareness. What would happen if she, from an ordinary family, were to face a similar situation in the future? Along the way to the office, Vera pondered over the event. The thought crossed her mind about what she could do to be more beneficial to the community.

Upon arriving at the office, she was assigned to interview a Buddhist, AB Susanto. One of Susanto's statements touched her heart: "If your life is only beneficial to yourself, then you are among those who lose."

Returning home from the office, she sought various information about the greatest challenges in the lives of non-working housewives. She found the answer: managing family finances. Especially for housewives from underprivileged families with limited income, saving seemed like an impossible task.

Vera then sought ways to gather housewives to come to her house and discuss the importance of saving. It wasn't easy. Several invitations were sent out, but none were attended. Knowing that their need was money, she made an invitation with the lure: those who attended would receive a loan of Rp 1,000,000.

That method proved effective. At least 20 women responded to her invitation. The promise to provide a loan did not materialize because Vera didn't have that much money. On the bright side, the meeting yielded the desired results. From the meeting on the night of January 8, 2014, they agreed to form an association called "Kelompok Bersatu Kerabat Pulo Kambing" (United Family Group of Pulo Kambing).

The philosophy of the meeting was simple: how the women living in Kp. Pulo Kambing RT 008 RW 002 Jatinegara could gather in a group to improve the economic situation of their families. The meeting also agreed on a saving schedule every Wednesday from 09:00 to 12:00 WIB. The savings started from Rp 1,000.00.

<b>Institution Name</b>	Gunung Emas Waste Bank
<b>Year Established</b>	2014
<b>Office Address</b>	Jl. Kampoja 3 No. 9A, RT.9 RW.11, Rawamangun, Kec. Pulo Gadung, East Jakarta, 13220
<b>Customers</b>	557 individual customers, 6 companies, and 6 schools
<b>Managed waste</b>	approximately 6-7 tonnes per month

The savings would be used to support business capital for these 20 women. In the first week, savings amounted to Rp 100,000. This money was immediately used by one of the group members for a fried rice business. According to the agreement, the collected funds had to be circulated for members' businesses. The repayment system for business capital was in installments every day plus the savings.

## WASTE BANK EMBRYO

After a few months, this activity was warmly welcomed by the mothers in kampung (meaning village) Pulo Kambing. Many of them also enjoyed business capital from this savings movement. One day, a mother who wanted to save but whose husband's income was only Rp 50,000.00 per week came. With that amount, not only was saving impossible, but even daily meals were insufficient.

Seeing the extraordinary enthusiasm of the mother, Vera suddenly asked if there was any plastic or cardboard waste at her house. The mother answered yes. Vera asked her to bring the waste. Why did she think of waste? Vera remembered an old man who regularly passed by her house in the morning with an empty sack and returned in the evening with it full of waste.







“ **The philosophy of the meeting was simple: how the women living in Kp. Pulo Kambing Jatinegara could gather in a group to improve the economic situation of their families.** ”

At that time, Vera hadn't thought about what waste would become. After the incident, Vera searched for information through Google about waste and found a news article about waste banks. She then discussed and invited four other mothers to form a team in what would later become the waste bank.

As someone unfamiliar with waste banks, she asked her middle school friend Veronica. She was one of the administrators at the APIK legal aid institution. It was Veronica who provided information about the APK Foundation, an organization focused on waste banks at the time. Long story short, Vera and her five friends received training at the APK Foundation, starting from learning about types, and sorting methods to selling waste.

After gaining adequate knowledge and skills, on March 2, 2014, they declared the establishment of the Kerabat Pulo Kambing Waste Bank. Vera, as the initiator of this activity, was appointed as the chairwoman, Yayan Ferutensi as the secretary, Partinem as the treasurer, Iin Parlina and Idawati as public relations.

The five of them then set the schedule for accepting waste every Sunday from 09:00 to 12:00 WIB. Residents who wanted to 'bank' their waste are referred to as customers, and can do so at the waste bank according to this schedule. When a customer came outside of that schedule, they would be asked to come the following week.

According to Vera, they learned about this waste bank for about 3 months. Initially, the mechanism of this waste bank's work was quite simple. The waste delivered by customers

in the morning would be sold to collectors in the evening. And so on. This system was used because the waste bank's warehouse at that time was only 3 square meters.

After becoming proficient in waste bank skills, in May 2014, they expanded the team's membership by inviting mothers from neighboring RWs (hamlet). Finally, Mutia Ratnawati from Kp. Lio RW 003, Sri Rahayu from Kp. Baru Klender RW 001, and Farida Soleha from Kp. Rawabadung RW 007 joined.

With the expanded team, the waste bank began mapping the abilities of its members. Several skills were mapped, ranging from hard skills such as waste sorting, reading waste scales, and finding marketplaces, to soft skills such as writing letters, operating Microsoft Office, and managing social media.

To introduce the Kerabat Pulo Kambing Waste Bank, they organized an activity called "Clean Friday Activity." This activity was conducted every Friday from 09:00 to 11:00 WIB. The target was to visit 2 neighborhoods every Friday. In the early years, the average waste collected by the waste bank was 300 kg per week. The savings from waste were converted into savings for their customers.

Initially, this waste bank activity received criticism and ridicule from several people, both expressed directly to Vera and her team members. Vera said the Chair of the RT was one of those who criticized the existence of the waste bank. He felt that what the waste bank was doing was taking the livelihood of scavengers who were already there.

Criticism and complaints also came from family members. Vera also faced disapproval from her own family. Earning a living from waste was considered shameful for the family as if there were no other jobs available. Vera and the waste bank managers listened to all the criticism but did not attempt to argue. They hoped that time would provide the answer.

One team member who did not receive family support at first was Mira. This woman had been married for 4 years but had not yet been blessed with children. When she expressed her desire to join the waste bank activity, her mother immediately

**8 JANUARY  
2014**

Do research on the internet about waste and waste banks. Create a team consisting of 5 people and take part in waste bank training.

**2 MARCH  
2014**

Declaration of the establishment of the Kerabat Pulo Kambing Waste Bank.

Expanding membership from three other RWs. As well as mapping the abilities of its members.

**MAY  
2014**

In an effort to improve the family economy, 20 women from RT.008 Kp. Pulo Kambing agreed to form a "Kelompok Bersatu Kerabat Pulo Kambing" (United Family Group of Pulo Kambing).

said, “Before, you couldn’t even keep the house clean. What’s more, if you join the waste bank. It’s dirty, filthy. It’ll be even harder for you to have children!”

Her parents’ negative views did not shake Mira’s enthusiasm to be active in the waste bank. After a year of joining the waste bank, what her family feared did not come true. Although dealing with waste every week, a year later it proved that she started to become pregnant.

Vera’s family, who initially lacked support, eventually changed their minds a year later after her activities in the waste bank proved beneficial and received recognition. The turning point occurred in 2015 when Hayono Suyono, former Minister of BKKBN in the New Order Era, visited the waste bank in Pulo Kambing.

At that time, Hayono Suyono, who was also a scout leader, invited several Regional Working Units (SKPD) from various regions to see the waste bank movement in Pulo Kambing. To the guests he invited, Suyono said that limited land did not prevent the existence of a waste bank and its benefits to the surrounding community.

Within two years, those involved in the Pulo Kambing Waste Bank reached 20 people. In addition to running a savings and loan cooperative and waste bank, there were other activities such as learning public speaking, English, and Tahsin. Several years later, the variety of activities increased with hydroponic farming, making remakes from waste to educational tourism.

The hydroponic farming activity emerged due to the lack of trees in Kampung Pulo Kambing. The pollution level in this area was also high due to the many furniture businesses. Planting with recycled bottles as media was also started. Many families participated in this activity. Although the harvest was not optimal, at least every house had a green tree that could contribute oxygen to family members.

Several other innovations were also made to increase the attractiveness of people to save waste. One of them was through cooperation with state-owned or private companies.

This cooperation came after efforts from the beginning made by the management to gain attention (and support) from several government and private institutions for this movement.

Vera still remembers how at that time she sent notification letters to several companies and government institutions about the existence of this waste bank. One of those who responded to the email was PT Aneka Tambang Logam Mulia. The relationship with this state-owned company later gave rise to the waste-saving program with gold results.

In the program called NyiMas, residents who saved waste regularly for six months would receive their savings in the form of gold. There was quite a lot of enthusiasm for this programme. In 2017, at least 1,800 grams were obtained by customers within 2 years. This program ended in 2018.

When it was established in 2014, the waste bank utilized a small plot of land to operate. This also made the waste bank’s working mechanism very simple. Customers were asked to collect waste on Sunday mornings, and by evening, it had to be sold. One reason was the limited storage warehouse. They wanted a bigger warehouse, but unfortunately, there was only Rp 2 million available.



2015

The first exposure of the Kerabat Pulo Kambing Waste Bank to the public outside Pulo Kambing village, and recognition from the surrounding environment.

Members become 20 people. Add other activities outside of waste collection.

2016

2017

Collaboration with PT Aneka Tambang Logam Mulia in a program to save waste with gold proceeds.

Establishment of the Pulo Kambing Foundation on an area of 575m<sup>2</sup>, with a membership of more than 800 members

2018

Luck came when a homeowner gave land rights to the waste bank and cooperative on an area of 575 m<sup>2</sup>. With a larger office and warehouse, the management then considered the need for an organization to oversee the operations of this activity. At that time, the cooperative and waste bank already had around 800 members.

The plan materialized in 2018 with the establishment of the Pulo Kambing Foundation. This foundation later became the legal umbrella for waste bank activities. Its name remained Pulo Kambing Waste Bank until it was later changed to Gunung Emas Waste Bank in 2022.

The waste bank's cooperation with PT Antam was not only in implementing the NyiMas program. For this program, there had to be an initial capital of around Rp 20 million available. The waste bank managers also received digital marketing training. In addition to PT Antam, the waste bank also received support from PT Kalbe Farma in the form of two Biopore Digging Hole tools.

## CHALLENGES AND OPPORTUNITIES DURING THE COVID-19 PANDEMIC

After operating for approximately six years, challenges arose in 2019. The Covid-19 pandemic that hit the world led people to drastically reduce outdoor activities. Activities of the waste bank and savings and loan cooperatives were also affected. The team, which initially consisted of 20 members, was reduced to just 5.

Fortunately, an opportunity came from an offer by Sandiaga Uno, who owned the Ready-to-Work House Institution, which at the time focused on providing online classes. Hydroponics became an attractive activity for the Ready-to-Work House. The Director of the Ready-to-Work House offered cooperation with the Pulo Kambing Foundation to conduct hydroponic classes.

2020

During the Covid-19 period, holding Hydroponics classes for Sandiaga Uno's Lembaga Rumah Siap Kerja online class training.

Changing the name of the waste bank from the Kerabat Pulo Kambing Waste Bank, to the Gunung Emas Waste Bank

2022

“

**Vera and the waste bank managers listened to all the criticism but did not attempt to argue. They hoped that time would provide the answer.**

”

The Ready-to-Work House is one of the government's partners in the Pre-Employment Card program. Through hydroponic training classes, the foundation received payment of Rp 10,000 per video purchased by Pre-Employment Card participants. It turned out that many people were interested in these hydroponic training classes. Over 60,000 people bought the classes. Between 2019 and 2020, they generated revenue of Rp 600 million.

The hydroponic training classes were the result of cooperation between the Pulo Kambing Foundation and hydroponic experts. The income generated from these classes was directly distributed. This income greatly helped the economic situation of the team members. Part of the earnings was used for a vacation to Bali. After the Covid situation eased, waste bank activities gradually recovered.

Since its establishment, the waste bank team has been actively promoting its activities to gain support. In addition to PT Antam Logam Mulia, support also came from several private companies. Some provided supporting equipment such as vehicles, while others sponsored events.

Support also came from international environmental conservation organizations in Indonesia, such as WWF, in 2022. Their support was more managerial, focusing on waste bank operations. The skills provided through this training included setting work targets and preparing clear and detailed activity reports.

Besides receiving training that improved the waste bank management skills, another important benefit gained through cooperation with WWF was access to a wider network.

The waste bank also received equipment support for its operations from WWF. The equipment included shredders, hot press machines, and cold press machines. Operational vehicles for waste transportation were also provided. Similar vehicles were also obtained from Bank BNI and the Ministry of Trade.





## INNOVATION AND INCREASING CUSTOMER BASE

Now, approximately seven years since its inception, the Pulo Kambing Foundation is primarily focused on the waste bank and increasing its customer base. This includes enhancing the technical capabilities of its managers and developing previously untapped areas such as multilayer plastic waste.

The collection of multilayer waste is a result of collaboration with a neighborhood chief in the Jati sub-district. In just two weeks, up to 300 kg of this type of waste can be collected. The waste bank sells this waste to PT Trilion Multiplastindo, which processes this type of waste.

The Gunung Emas Waste Bank has 557 individual customers, 6 companies, and 6 schools located in the districts of Cakung, Pulo Gadung, Matraman, and Duren Sawit. Since its establishment in 2014 until 2023, this waste bank has successfully reduced waste that would otherwise be disposed of in the Bantar Gebang landfill by 141,441 tonnes.

With an organization now larger than when it was founded, the waste bank's operations have also changed. Initially, waste collection was once a week, but now it's twice a week. Collection and sale days are scheduled for Tuesdays and Thursdays, with Mondays, Wednesdays, and Fridays designated for collection. Holidays are used primarily for community outreach.

Currently, the core team, which is fully employed by the waste bank, consists of five people, with one serving as a backup. Waste collection at designated points requires a minimum of 300 kg. If this quantity is available, the team member informs the management for collection. Quantities below that threshold can still be collected if they are along the same route. The average amount of waste collected and sold per month is currently around 6-7 tonnes.

Another activity of the waste bank since its inception is creating recycled products and educational tourism related to waste. Recycled products are made from multilayer plastic waste that was previously unsellable. The first products made were bags and coffee pouches.

The aim of producing these recycled products was to provide an additional source of income for the community. However, this effort has yielded limited results. The products have not been widely embraced by the community due to their limited availability and higher prices compared to similar products from China. Nevertheless, these recycled products are still being retained.

“

**Since its establishment in 2014 until 2023, this waste bank has successfully reduced waste that would otherwise be disposed of in the Bantar Gebang landfill by 141,441 tonnes.**

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Another ongoing activity that continues to develop is educational tourism for the community regarding waste management. This emerged as a byproduct of the active social media presence of the waste bank, which attracted people to visit. As of 2023, approximately 1,500 people have visited and learned about the waste bank.

The Gunung Emas Waste Bank has received several awards, including the National Best Waste Bank Award from the Ministry of Environment and Forestry and the National Best Waste Bank Award from PT Pegadaian. The award from the Ministry of Environment and Forestry was received in recognition of the NyiMas program in 2017.

The Pulo Kambing Waste Bank continues the NyiMas program, in collaboration with PT Pegadaian. Unlike before, this time customers will not receive physical gold but rather gold savings at PT Pegadaian. This program is currently being finalized. Since 2023, the Gunung Emas Waste Bank has relocated to a new office at Jalan Kamboja III No. 9A, Jakarta.



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# MENTORING VULNERABLE GROUPS EVOLVING INTO A WASTE BANK

The story of the Kumala Waste Bank began with a mentoring activity for street children around Tanjung Priok in 2004. At that time, there was a program by the Ministry of Youth and Sports to mentor street children. Dindin Komarudin initiated it by providing mentoring to around 30 street children in his neighborhood.

The initial approach used to mentor street children was through religious and educational activities. The hope was that they could break away from their long-standing activities, ranging from involvement in motor vehicle theft, acts of violence, to the use of narcotics and other dangerous drugs. However, this method did not completely deter them from their past activities.

Deemed ineffective using that approach, the idea emerged to engage in waste recycling activities by utilizing the resources available in their surroundings. The results of recycling were then used as materials to create various handicrafts such as paper bags, photo frames, and several other accessories. To oversee this new activity, they formed a group called Gallery K'Qta in 2006.

This recycling activity proved to be quite effective in preventing them from returning to the streets, as many became busy with recycling activities. In the initial stages, the quality of



<b>Institution Name</b>	Kumala Main Waste Bank
<b>Year Established</b>	2016
<b>Office Address</b>	Jl. Budi Jaya Sungai Bambu, Tj. Priok, North Jakarta
<b>Customers</b>	540 individual customers, 7 companies. 25 waste bank units, 2 schools, 1 institution
<b>Managed waste</b>	1.5 - 2 tonnes of waste per month

the products was still mediocre. There was an incident where someone came to the Gallery K'Qta secretariat and bought recycled goods. After they left, they ended up abandoning the purchased items on the street. However, this incident did not deter them; instead, it fueled their determination to improve the quality of their recycled products.

Sorting waste involving street children posed its own challenges initially. There was a negative stigma ingrained in the community, especially around the Gallery K'Qta secretariat. Moreover, some of the street youth were part of groups that had been talked about due to their violent activities, such as the red axe group.

There was an incident where a neighbor near the secretariat lost a laptop. Suspicion immediately fell on the children at Gallery K'Qta. Not only did they gossip, but they also visited the secretariat and searched it. This negative stigma caused the Gallery K'Qta group to move their headquarters several times.

This negative stigma certainly disrupted the Gallery K'Qta group. This situation was one of the driving forces for the organizers to establish a legal entity called Kumala Foundation in 2008. The existence of this legal entity was intended to serve as an umbrella for all the group's activities and facilitate the socialization of their activities to the community.



This negative perception gradually began to fade after recognition of the activities of the Kumala Foundation since 2010. The secretariat was increasingly visited by guests from outside who wanted to see the recycling activities. These visitors were not only from government representatives but also from non-governmental organizations and foreign organizations, including those from Japan.

Recognition from outside sources made the community more open to accepting this group. Moreover, the foundation also began to involve children from the surrounding areas in recycling activities, especially those who were vulnerable to being on the streets. Because they felt the direct positive impact, the foundation and its activities were eventually accepted and even prohibited from relocating their secretariat.

In addition to being accepted by the surrounding community, support also came from the neighborhood officials, including the neighborhood head, sub-district head, and district head. Their secretariat, located in Sungai Bambu Tanjung Priok, Jakarta, is still under a lease, with an area of about 300 square meters. Besides functioning as a secretariat, it also later served as a warehouse when the foundation began to operate as a waste bank.

## ESTABLISHING A WASTE BANK

As the years passed, the abilities of street children at the Gallery K'Qta continued to develop. The quantity and quality of the products they produced also increased. In fact, one of their recycled paper products could be sold at the Gramedia Bookstore by collaborating with a souvenir distributor in Bandung, West Java. Every year, with increasing production gave rise to a new problem: the supply of raw materials began to diminish.

The need for raw materials then prompted the establishment of the Kumala Waste Bank in 2016. One of its initial goals was to quickly and easily collect paper waste from the surrounding environment. As it evolved, the waste accepted expanded beyond just paper to include other types of inorganic waste such as plastic and others.

In 2019, the Kumala Waste Bank received an award from the Governor of DKI Jakarta Province as the Best Waste Bank at the provincial level. In the same year, the Kumala Waste Bank also began to reach out to scavenger groups, who were already skilled at sorting waste but lacked awareness about saving waste.

“  
**Visitors included not only government representatives but also non-governmental organizations and organizations from abroad, including from Japan.**  
”



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Initially, the Kumala Waste Bank only had customers from foster children who fell into the vulnerable category of street children. These vulnerable street children are those who still have families and homes but occasionally engage in street activities like begging.

The waste bank activities then expanded as more customers outside of children were added. By 2022, the number of waste bank customers had reached 300, with the average waste tonnage managed reaching 1.5 - 2 tonnes per month. The Kumala Waste Bank established a cooperative as a legal umbrella to conduct business activities in waste management.

In 2022, the Kumala Waste Bank was encouraged by the North Jakarta Environmental Office and the DKI Jakarta Provincial Environmental Office to become the Main Waste Bank (BSI) in North Jakarta. For this change in status, Kumala Waste Bank received prior mentoring about an overview of waste management before deciding to proceed.

The verification process was carried out by the DKI Jakarta Provincial Environmental Office as an administrative step, which was then ratified through the Decree (SK) of the Head of the DKI Jakarta Provincial Environmental Office on March 24, 2023, with Number e-0069 Year 2023 regarding the Management Structure of the North Jakarta Kumala Waste Bank for the Period of 2023 - 2026.

After the issuance of the Decree in March 2023, there was no further support in the form of mentoring and infrastructure from the North Jakarta Environmental Office or the DKI Jakarta Provincial Environmental Office. This support was needed for BSI to be ready to fulfill its larger mandate as the leading waste bank.

Support actually came from WWF-Indonesia. After discussions on May 25, 2023, WWF-Indonesia and the Kumala Foundation agreed on the "Development Program of the Kumala Waste Bank in Plastic Waste Management in North Jakarta". As part of this cooperation, WWF provided support in terms of facilities such as a pickup truck, scales, and laptops.







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Another assistance from WWF came in the form of a larger capacity electric press machine, replacing the diesel press machine previously owned by Kumala. The use of diesel press machines was not desirable to continue due to their noisy operation, which disturbed the neighbors. Although the waste bank already had an electric press machine, its capacity was small, capable of processing only 20 to 25 kg. The new press machine could process 40 to 50 kg.

Initially, Kumala's activities were still simple. Each area was divided into groups, such as the Onion Garden group, the Red Soil group, and so on. The waste bank team would collect the waste once a week. As the number of customers increased, collections became 2 to 3 times a week. After becoming the BSI, waste collection was done daily.

The waste collection system was based on the amount of waste available. If a waste bank unit had collected less than 100 kg of waste, collection would be scheduled on the same day according to the Kumala team's schedule. However, if a waste bank unit had more than 100 kg of waste, collection could be done separately.

The collection process is carried out through two mechanisms: (1) Direct deposit to Kumala Waste Bank. (2) Waste collection from the group's location points. The waste collected from customers is partly recycled into high-value economic products such as recycled art paper/crafts, utensils and drinkware products from wood waste, etc. For the portion of waste that cannot yet be processed into products, it is sold to partners.

## EDUCATION AND DEVELOPMENT

Since its inception, Kumala has had an educational function, which originally began with the Gallery K'Qta group. At that time, the waste recycling skills of street children often led them to train community groups in Indramayu, DKI Jakarta, and several cities in Kalimantan, Riau, Aceh, and Papua.

After becoming Main Waste Bank, this educational function continued with visits from the community or educational institutions. At least, several representatives from different regions visited Kumala. For instance, three officials from outside Jakarta visited. In October 2023, the Regency of Belu personally visited the waste bank and requested them to come to his region to teach these skills.

In addition to attending invitations and requests to conduct training sessions, Kumala has also conducted waste management training sessions for high school students several times. One of the activities held in February 2023 was inviting representatives from all high schools in North Jakarta. Kumala participated in environmental training during the event.

Currently, Kumala has 540 individual customers, 7 companies, and 25 waste bank units, two schools, and one institution. The WWF assistance has also helped increase the waste managed by Kumala. Until December 2023, the average waste managed reached 11 tonnes per month, including 6-7 tonnes of plastic waste.

Kumala's customers are divided into several categories: for individuals and companies. For individual categories, there are three types: Regular savings, education savings, and





holiday savings. For companies, there are two types: environmental savings and social savings.

Regular savings is a type of savings where the deposited funds can be withdrawn after being an active customer for at least two months or when the balance reaches Rp200,000 (Two Hundred Thousand Rupiah).

Education savings is a type of savings where the deposited funds can only be withdrawn every school semester or for school-related needs.

Holiday savings is a type of savings where the deposited funds can only be withdrawn before major religious holidays, such as Eid al-Fitr, Christmas, etc.

Environmental savings is a type of savings where the deposited funds are used for payment for recycled products produced by Kumala.

Social savings is a type of savings where the deposited funds are used for social activities in the KUMALA Foundation such as assistance for foster children, provision of food/basic necessities, educational activities (scholarships), religious activities, etc.

After approximately seven years of operation, Kumala has acquired several facilities and infrastructure. These include a storage warehouse with a maximum capacity of 5-6 tonnes, one sitting scale with a capacity of 100 kg, and two press machines. There are at least 3 transportation tools available, including one pickup truck with a maximum capacity of 800 - 900 kg, one box truck with a maximum capacity of 300 - 400 kg, and one motorized cart.

Currently, there are 11 personnel in Kumala. Four are in administrative roles, while the rest are in the field team. Moving forward, there are several development efforts planned. One of them is the expansion of the membership base since many waste bank units (BSUs) have yet to partner with Kumala Waste Bank. There are still around 300 BSUs in 3 districts (Tanjung Priok, Koja, and Cilincing) that have the potential to become partners or customers.

Another challenge for BSI Kumala is the high demand from corporate customers for waste management, especially for upcycling into products to be used by the companies themselves. Additionally, there are complaints from customers regarding delays in the collection of non-organic waste due to limited transportation tools and the overload of Kumala's warehouse.



# TWIN MISSIONS OF A RECYCLING VILLAGE

Not all cities are as fortunate as DKI Jakarta. In 2019, the capital already had Governor Regulation Number 142 of 2019 concerning the Obligation to Use Environmentally Friendly Shopping Bags in Shopping Centers, Grocery Stores, and Traditional Markets dated December 27, 2019. This regulation aimed to reduce the use of plastic waste.



Plastic bags made of Low-Density Polyethylene (LDPE) are still “widely used in daily shopping and transactions, both in person and online. Unfortunately, not all cities have regulations to use environmentally friendly bags like in Jakarta. This includes Lampung Province.

Sabrina Naula Allisha encountered a significant amount of LDPE waste at the Air Naningan Village Landfill, Tanggamus, Lampung, in 2021. In that area, there was a considerable amount of single-use plastic waste ending up in the landfill. Sabrina was interested in this inorganic waste issue.

## ESTABLISHMENT OF RECYCLING VILLAGE

Outside of waste issues, Sabrina also cared about empowering women. Due to the pandemic, women in Air Naningan lost their jobs as tapis makers, a type of batik in Yogyakarta. These two issues prompted Sabrina to stay there for a while and brainstorm ideas to address both: handling waste and empowering women’s economic status.

Concerned about these two issues, Sabrina established Recycling Village in October 2021. The concept was to recycle

LDPE plastic waste into valuable, usable, and aesthetically pleasing products. The first project to make products from LDPE was done with women from Air Naningan.

With her initiative, Sabrina invited two residents, Happy and Kris, as the “first artisans” to try making creations from LDPE waste at the landfill. The process began with sorting and collecting LDPE plastic waste from the Air Naningan landfill. After obtaining the LDPE waste, it was cleaned and cut into rectangular sheets according to the size of the intended product.

In addition to collecting waste directly from the landfill, Recycling Village also organized workshops for the community on the outskirts of Air Naningan Village. These workshops aimed to provide information about Recycling Village, and waste banks, and also encourage the community to sort and collect plastic waste to be processed by Recycling Village.

The women and housewives were trained to make fashion accessories from plastic waste, including cleaning, cutting, using pressing machines, ironing, and sewing. The training lasted for one day, after which the women who participated were referred to as beneficiaries or permanent partners of Recycling Village.

From October 2021 to February 2022, Recycling Village focused on training beneficiaries to produce high-quality products and product development. In March 2022, Recycling Village began selling products to consumers through an online shop.

As time went on, Recycling Village’s business grew. Demand came not only from consumers (Business to Consumer) but also from companies. The demand for products in large quantities from other companies or businesses led Recycling Village to create a new business concept called Business to Business (B2B).

## RECYCLING VILLAGE JAKARTA

In conjunction with the development of the B2B business concept, which also aimed to manage plastic waste, the WWF-Indonesia invited Recycling Village to collaborate on the “Plastic Smart Cities (PSC)” program. This is a global initiative led by city planning actions worldwide to reduce the production and consumption of plastic waste.

<b>Institution Name</b>	Recycling Village
<b>Year Established</b>	2021
<b>Office Address</b>	Lenteng Agung, South Jakarta
<b>Managed waste</b>	372.28 kg of waste, equivalent to 15,635 sheets of plastic waste.



The Plastic Smart Cities program conducted by Recycling Village was carried out with the concept of “From Trash to Treasure,” similar to the initial concept of Recycling Village’s establishment. The project in Jakarta duplicated what had been done in Lampung.

The support provided by WWF for the development of activities in Jakarta included capital expenditure (CAPEX) and operational expenditure (OPEX). All the needs of Recycling Village were supported by WWF, from office space and production equipment to training.

The first program carried out was training for partners, which was conducted in three stages. Participants who attended the training were then designated as beneficiaries. In the first stage, the participants were mothers involved in waste banks who also became partners in collaboration with the PSC. However, considering that most of the women participating in the training mostly reside in Depok, there were some difficulties because they lived quite far from Recycling Village’s operational office.





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The first batch of training produced eight participants who were mothers from waste banks in the Depok area. However, only three were selected to become permanent partners of Recycling Village, those who had received training and had carried out production activities resulting in fashion accessories from plastic waste that met the required quality standards.

Recycling Village held a second batch of training to recruit additional partners or beneficiaries. For this second batch, Recycling Village collaborated with the mothers of RW 1,

Lenteng Agung Village, Jagakarsa District. Recycling Village provided socialization to the mothers of RW 1 regarding training in making fashion accessories from LDPE plastic waste, as well as socialization regarding the roles and benefits of joining as beneficiaries or partners.

After the socialization, nine participants attended the workshop in batch 2. However, out of the nine participants, only three were selected to become permanent partners of Recycling Village. Recycling Village then held a third batch of training. From the entire training program, there were 18 beneficiaries or mothers who participated in the training on making fashion accessories from plastic waste. Additionally, seven training participants became permanent partners of Recycling Village.

With the establishment of permanent partners from the second batch of training, Recycling Village began production activities and created a production tracking system for permanent partners to ensure that the products produced by them met consumer demand targets. Recycling Village also created long-term planning and schemes for the “From Trash to Treasure” project. Recycling Village also actively engaged in marketing activities to ensure that both the B2C and B2B concepts they operated could grow rapidly.





During the implementation of the PSC program with WWF, Recycling Village had a target to process 360 kg of LDPE plastic waste, equivalent to 15,120 sheets of plastic, into products and sell them to consumers within six months. However, this target could not be achieved due to inconsistency among the beneficiaries.

Recycling Village has offered benefits to mothers in the form of income to provide them with earnings and training related to recycling plastic into usable products. However, many were unwilling to become permanent partners of Recycling Village.

In addition, the products produced by the beneficiaries did not directly meet the required product quality standards. This was very different from the beneficiaries in Recycling Village Lampung, where their enthusiasm and commitment to producing high-quality and stable products were evident. This was because the women involved as beneficiaries of Recycling Village Jakarta had other commitments such as being PKK and Posyandu cadres.

To boost the enthusiasm and consistency of Recycling Village partners, additional training was provided. Additionally, Recycling Village is motivated by highlighting the importance of the mothers' role in creating change for a better environment.

Recycling Village also explained that if they could produce high-quality products in sufficient quantities to meet consumer demand, the profits would also be shared with them. There were additional benefits that they could gain through this collaboration, such as gaining public speaking skills to address communities or partner companies.

In addition to the difficulties in maintaining the beneficiaries' enthusiasm, a shortage of raw materials or LDPE plastic waste with certain colors also posed a challenge in production activities. Many consumer companies asked Recycling

Village for products with specific colors to be used for certain products in significant quantities.

To address this issue, Recycling Village added collaboration partners in the form of waste banks that played a role in supplying raw materials to be processed into products. Initially, the waste banks supplying LDPE plastic raw materials were only 68 Waste Bank Unit in Jagakarsa and Kumala Main Waste Bank, which were also WWF partners, and Rekosisistem.

After that, additional collaboration partners were added from outside Bogor because the colors obtained from LDPE plastic waste were only black, white, and red. To increase the variety of colors from plastic waste, it was necessary to obtain them from outside Jakarta. Therefore, Recycling Village also collaborated with Lapak Cibinong.

## FUTURE DEVELOPMENTS

After operating for about two years, Recycling Village has produced a variety of products, which means it has contributed to reducing waste sent to landfills. The smallest Recycling Village product, such as a cardholder, can be made from 5-6 sheets of plastic bags. Meanwhile, the largest product, the macro tote bag, can be made from 12-14 sheets of plastic bags.

The total number of products successfully sold over eight months was 685 products. Almost all sales were generated from B2B transactions or other companies ordering Recycling Village products in large quantities in a single order.

The high demand for products from other companies was also supported by the collaboration program with WWF due to the establishment of the Recycling Village in Jakarta. Some companies that have purchased Recycling Village products include Amore Pacific, Tavi, Brightspot, Pertamina, MINI, Samsung, BRI, BliBli, and Joyland Festival.

Recycling Village also continues to improve its marketing concept by enhancing marketing through Instagram and its website. Additionally, Recycling Village conducts workshops for the general public, stakeholders, and companies with themes related to processing plastic waste into valuable products.

Workshops with such themes are held in collaboration with Readingnook and Foreword Library, West Java Festival, BRI Festival, Citra Buana School, and Sonderlab. Workshops have also been organized independently by Recycling Village for the general public at Seremoni Cafe, Bogor City.

The products produced by Recycling Village in Jakarta and Lampung are different. While Recycling Village Lampung produces bags or tote bags, Recycling Village Jakarta produces products such as wallets, pouches, pencil cases, and card holders.



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**The success of Recycling Village in selling products also has a positive impact on mothers or beneficiaries in the form of income, providing them with employment opportunities.**

”

During the eight-month PSC program, many company requests were for small-sized items such as wallets, pouches, pencil cases, and card holders. Therefore, WWF’s role greatly assisted Recycling Village in expanding the types of products produced. The success of Recycling Village in selling products also has a positive impact on mothers or beneficiaries in the form of income, providing them with employment opportunities.

Ovie Tapsiah, one of the partners or beneficiaries at Recycling Village, expressed joy at joining Recycling Village. Initially, she worked in a shop in Manggarai area, South Jakarta. Afterward, she decided to quit and focus on being a housewife until she received an offer from the Recycling Village team to participate in training.

According to Ovie, the initial plan for joining as a partner was to increase family income. She is grateful to have been chosen as a partner to produce Recycling Village goods. “Now, my monthly income has increased, the work is flexible but there must be targets to achieve, and I get to go out.”

Recycling Village products are sold at relatively high prices. Small-sized products like small wallets are sold for Rp165,000, and standard-sized wallets are sold for Rp185,000. Then, small-sized bags like handbags or sling bags are sold for Rp225,000, and small-sized tote bags are sold for Rp245,000. Large-sized products like shopping bags are sold for Rp335,000, pocket shopping bags are sold for Rp355,000, and macro totes are sold for Rp395,000.

Although these prices are relatively high, they are considered worthwhile because the raw materials used are 100% made from plastics, requiring different and specialized efforts and being quite challenging in the manufacturing process. Moreover, these prices are commensurate with the story or background of the company’s establishment.

Fitra is one of the consumers who has bought products from Recycling Village. She admitted to loving Recycling Village products because they offer another element, namely the empowerment of women. “Absolutely in love with the products and the values that it upholds. The epitome of empowered women empower woman,” said Fitra.

Despite facing several challenges in implementing this program, Recycling Village achieved results in line with expectations. Recycling Village ultimately achieved results surpassing expectations (of 360kg), processing 372.28 kg of waste, equivalent to 15,635 sheets. This significantly contributed to environmental improvement by reducing the amount of LDPE plastic waste that should have only been disposed of in the Final Processing Place (TPA).

Regarding plans, RV will expand the product line from those already available. There are also plans to process HDPE (High-Density Polyethylene) waste, which is a type of clean white plastic commonly used for tissue bags, detergent bottles, oil, heat-resistant plastic, plastic pipes, and shopping bags.

With this new plan, still in the research and development stage, there will automatically be new products that can be produced. With the addition of these new products, it is hoped that more plastic waste can be processed, thereby reducing the amount that enters landfills.





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# STORIES FROM BOGOR

- Kenanga Waste Bank Unit
- Bersih Istiqomah Waste Bank
- Rekam Jejak Alam Nusantara Foundation & Satgas Ciliwung Kota Bogor



# FROM TUNAS HARAPAN TO KENANGA

Originally named “Tunas Harapan Waste Bank,” it was established in 2016 and is located in RW 06 of Babakan Village. The establishment of this waste bank was initially aimed at participating in a competition organized by Garda Oto’s corporate social responsibility initiative. After the competition, the waste bank activities ceased. The RW management eventually decided to transfer its management to RW 01 of Babakan Village.

Upon moving to RW 01, it was renamed “Kenanga Waste Bank Unit” in 2017. The name Kenanga (Cenanga) was taken from the name of a Posyandu (Integrated Health Service Post) in RW 01, namely Posyandu Kenanga. The existence of this waste bank unit was legalized through the Village Decree (SK Kelurahan) No. 149/182-BBK/2017. This is also an implementation of Government Regulation (PP) of the Republic of Indonesia No. 18 of 2008 and Regional Regulation (PERDA) No. 9 of 2012 concerning waste management.

Initially, the main activity of the Kenanga Waste Bank Unit was managing non-organic waste received from residents of RW 01 of Babakan Village, Central Bogor Sub-District. Every waste depositor automatically becomes a customer. This waste deposit can be paid in cash or saved, which can be withdrawn at any time.

All saved waste is recorded in a passbook. The money in this savings book can be used to pay for tokens and electricity bills, Regional Water Company bills, Social Services Agency bills, gas, basic needs, and school fees by debiting from the passbook at the PPOB (Online Bank Payment Point) counter available at Kenanga Waste Bank Unit.

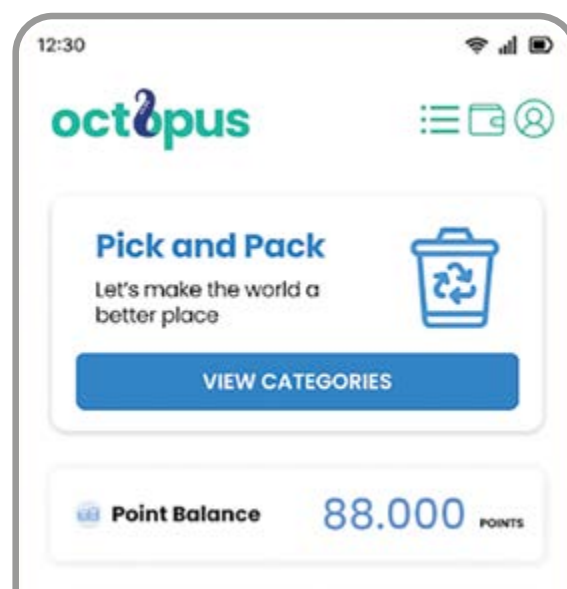
For non-organic waste, customers are served in two ways: digital and conventional. For digital customers, the Kenanga Waste Bank Unit collaborates with the Octopus application. If someone has waste to sell, they need to open the Octopus application and input their waste data there. For example, how many kilograms of plastic, how many kilograms of bottles, etc.

Once filled out correctly, the data will be input into the system and sent to the Kenanga Waste Bank Unit. Thus, the waste bank knows how much waste there is and what types. The Kenanga Waste Bank Unit team will then communicate

<b>Institution Name</b>	Kenanga Waste Bank Unit
<b>Year Established</b>	2017
<b>Office Address</b>	Jalan Pendidikan 3 RT 01 RW 01 Babakan Village, Central Bogor Sub-District, Bogor City, West Java 16128
<b>Customers</b>	63 digital customers, & 150 conventional customers.
<b>Managed waste</b>	1.5 - 2 tonnes of per month

to inquire when the waste can be collected. After an agreed-upon time, the team will come to pick up the waste. For digital customers, their earnings are in the form of points that can be used for shopping at Superindo and similar stores.

The digital customers who sell waste can be located far from the Kenanga Waste Bank Unit. Currently, there are 63 digital customers spread across various locations in Bogor Regency. Meanwhile, conventional customers live near the Kenanga Waste Bank Unit area and transact directly. Currently, there are 150 of them. In addition to individual customers, there are also customers from schools.







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## ENTERING ORGANIC WASTE

Kenanga Waste Bank Unit began dealing with organic waste in September 2021. The trigger was the visit of officials from the Bogor City Environmental Agency who offered the “Trash-Free RT Program.” No one dared to implement this program yet. With full confidence, Kenanga Waste Bank Unit took on the challenge. Since then, Kenanga Waste Bank Unit has been managing organic waste.

Organic waste is a major issue in the community environment, accounting for about 60 percent of household waste. So far, both organic and non-organic waste produced by households in RT 01 RW 01 has been collected by sanitation workers. Unsorted non-organic waste and all organic waste are disposed of at nearby waste collection points (TPS) in RT 01.

Unlike non-organic waste, organic waste does not sell quickly. Thus, people donate their organic waste to the waste bank. The waste bank then uses it for maggot feed. Maggot is for poultry feed such as catfish, chicken, birds and also the Kasgot (used maggot) used as fertilizer for vegetables organic farm. The money from maggot sales is partly given back to the community in the form of groceries such as cooking oil and others.

Unlike non-organic waste, the process of starting to handle organic waste can be divided into three stages.

First, the phase of necessity and compulsion. This phase lasted for 4 months from September to December 2021. In



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this phase, each cadre visited every house in their area at 5:30 - 6:00 AM. They conducted socialization while collecting the organic waste produced and then weighed and recorded the data in a table.

Second, the phase of capability and habit. This phase lasted for 4 months from January to April 2022. In this phase, facilitators determined the placement points for household organic waste. Each household was given an organic waste bucket as a place to collect waste at home. Every morning, the collected organic waste was brought to the collection point and later picked up by the cadre/facilitator to be taken to the maggot house.



Third, is the cultural phase. This phase lasted for 4 months from May to August 2022. In this phase, households brought their organic waste to the maggot house themselves. Although some residents still placed it at collection points. The facilitator's task in this phase was more about consolidating the program that had been carried out continuously.

All the organic waste collected is taken to the maggot house, which is a donation from WWF through Rekam Nusantara as its partner in Bogor City. It measures 2 x 7 m (14m<sup>2</sup>) with 18 ponds measuring 0.6 x 1.2 x 0.3 m.

In this place, all the collected organic waste is processed by maggots, which then produce fresh maggots. These fresh maggots are used as feed for fish and poultry. Meanwhile, the maggot residue (kasgot) is used for vegetable farming by the Kenanga Women Farmers Group (KWT Kenanga).

At the maggot house, the separation is made between materials that can be used directly for maggot cultivation and materials that need further processing such as chopping. Kenanga Waste Bank Unit does not have a shredding machine, so organic waste that cannot be used in the maggot house will be taken by the Environmental Agency officers.

The direct impact of this program is very tangible. During the program, the reduction of organic waste produced and disposed of at Waste Collection Points (TPS) has decreased significantly, to about 12 - 15 kg per day that is finally discarded at the Final Disposal Site (TPA).

The initiative of the Kenanga Waste Bank Unit has been rewarded. Kenanga Waste Bank Unit was awarded as the best waste bank in Bogor City at the BogorKu Bersih event in 2021. Meanwhile, RT 1 RW 1 was awarded as the 2<sup>nd</sup> champion for the Self-Help Residential category in the same event. The following year, RT 1 RW 1 won the 2nd place in the same category and event.

Kenanga Waste Bank Unit also has an educational function as it often serves as a reference for waste processing. Since proclaiming itself as the first Trash-Free RT in Bogor City in February 2022, many visits have been served. In that year alone, there were at least 60 visits.





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Those who learn about waste processing at Kenanga Waste Bank Unit come from various backgrounds. Apart from the Bogor sector, visitors also come from outside the city. For example, visits from students from Bengkulu, government officials from Central Sulawesi, and even visits from companies such as Pertamina Balongan. Generally, they want to learn how the Kenanga Waste Bank Unit manages waste.

## FOCUSING ON PLASTIC WASTE

There are 27 personnel involved in managing BSU Kenanga. Apart from the administrative team, there is also a waste processing team. In the future, BSU Kenanga will focus its management efforts on non-organic waste, while continuing its organic waste management program.

In 2021, the management of non-organic waste was still rudimentary, thus not significantly benefiting the administrators, let alone the customers. Moving into 2022, the management devised a work plan aimed at improving the handling of non-organic waste to provide greater benefits to administrators, customers, and the surrounding community.

In 2022, BSU Kenanga made several management improvements in waste management, ranging from data collection,

data analysis, expanding area coverage, enhancing public awareness, and collaborating with other stakeholders in the waste management sector.

Based on the data obtained in 2021, there was a reduction in revenue from cardboard waste in 2022 due to a 70 percent decrease in selling prices. Therefore, in 2022, BSU Kenanga prioritized the management of plastic waste considering price, ease of management, and the volume available in the community, while also reducing competition with waste pickers.

From BSU Kenanga's experience, the price of cardboard decreased by almost 75 percent. In addition to being cheaper, cardboard waste management is more complicated, requiring space and being prone to damage from rain and rodent infestation. In contrast, plastic waste prices are more stable and higher. The management of plastic waste is also easier.

Coincidentally, WWF provided support through the Plastic Smart Cities initiative in November 2022. The agreement commenced in March 2023. As part of the collaboration, WWF assisted in the form of operational vehicles, laptops, and other materials. Additionally, they provided facilities for outreach to households, schools, and institutions.

In addition to infrastructure support, WWF's assistance also came in the form of operational costs and human resources. As part of the collaborative commitment, BSU Kenanga aimed to collect 1 tonnes of plastic waste per month. By December 2023, BSU Kenanga could collect an average of 1 to 1.2 tonnes of plastic waste. They are confident they can collect 1.5 to 2 tonnes per month in 2024.



# ENVIRONMENTAL CONCERNS GIVE RISE TO A COMMUNITY WASTE BANK

Initially, there was concern among residents about the environmental conditions around RW 08 Kedung Jaya Tanah Sereal, Bogor, West Java, which were uncomfortable. The area is surrounded by residential areas, villages, schools, shops, and food stalls, resulting in many waste piles. The burning of waste by residents was also quite common.

In 2018, Nurita Eryani, who was the chairman of RW 08 at the time, gathered residents to find a solution to this environmental problem. She invited residents to discuss the issue, with the agenda of discussing the “Clean, Green, and Healthy Environment Movement.”

The number of attendees at the meeting fell far short of expectations. Out of 550 households invited, only 18 people attended. Nevertheless, the meeting was decided to proceed as planned. The agenda discussed how to address the waste problem in their area. While no solution was found at the meeting, they agreed to hold a second meeting inviting someone knowledgeable about waste management.

The second meeting was held a few days later. The number of attendees decreased even further, with only 12 people present. As per the residents’ request, Mr. Darga, a person known for his knowledge of waste management, also attended the meeting.

Unlike the previous meeting, participants at this meeting received an overview of how to handle waste. One of the proposals that emerged was to establish a waste bank, and residents were advised to coordinate with the Depok City Environmental Agency.

## EIGHT FOUNDERS OF THE WASTE BANK

Undeterred by the low turn-out, the residents decided to hold another meeting the following week. The number of attendees was even fewer, with only 8 people present. Employees of the Depok City Environmental Agency attended this meet-

<b>Institution Name</b>	Bersih Istiqomah Waste Bank
<b>Year Established</b>	2019
<b>Office Address</b>	Jl Pelita Jaya 2 No. 41-A RT. 03 RW. 08 Kelurahan Kedung Jaya, Kecamatan Tanah Sereal, Bogor, West Java 16164
<b>Customers</b>	427 customers
<b>Managed waste</b>	50 kg per month

ing and provided guidance on organic and inorganic waste separation and the establishment of a waste bank. One of the requirements for establishing a waste bank was a certificate from the local village office.

The eight people present at the meeting then agreed to establish a waste bank. The plan became a reality in September 2019 when the Bersih Istiqomah Waste Bank was officially declared.

As a waste bank, they required initial capital for operations. The management agreed to contribute funds as much as they could, with each issuing a receipt valued at Rp 25,000.00 per sheet. A total of 56 receipts were sold to the management, amounting to a nominal value of Rp 1,400,000, which became the initial capital for the waste bank’s activities.

This organizational structure was presented to the village office. The head of Kedung Jaya issued approval for the establishment of the waste bank on October 1, 2019. The waste bank’s secretariat is located at Jalan Pelita Jaya II No 41A RT 03 RW 08 Kelurahan Kedung Jaya, Kecamatan Tanah Sereal, Bogor City, West Java.



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## FOUR SOCIALIZATION METHODS

At the initial stage, the management developed several strategies to socialize the waste bank. They divided their work plan based on the methods used to introduce the waste bank: Walk and talk; Door-to-door; Distributing flyers; Broadcasting messages in WhatsApp groups; and conducting mass socialization and education activities.

The Walk and talk strategy involved approaching people wherever they met. After greeting and introducing themselves, they would discuss waste sorting practices and the weighing process, which would then be converted into monetary value.

In the Door-to-door method, the management knocked on doors from one household to another. After greeting and introducing themselves, they socialized about waste sorting. They also demonstrated waste sorting directly. At the end of the session, the management invited residents to come for weighing appointments.

For socialization through flyers, the management distributed papers containing promotions about waste sorting and examples of sorted items. These flyers were given to both familiar and unfamiliar people. The target audience was not only residents of RW 08 but also neighboring RWs.



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Two other methods involved the management broadcasting messages daily in WhatsApp groups about environmental issues with different content. Another method was mass socialization. One example was providing education to every school in the neighbourhood on waste sorting from its source.

These four socialization methods were carried out over a period of one month. The results were quite encouraging as many residents were interested in becoming customers. For non-organic waste such as cardboard and plastic, it became savings. Meanwhile, organic waste was donated.

For non-organic waste with economic value, with the assistance of the Depok City Environmental Agency, it was recommended to be sold to recycling centers, the nearest waste collection points, or in collaboration with waste recycling craftsmen. Organic waste was developed into planting media by mixing it with other organic materials.

These waste savings, recorded in a book, could be withdrawn by customers when needed. For example, coinciding with school fees increases or Eid al-Fitr. However, the principle was that waste savings could be withdrawn by customers at any time.

Based on experience so far, customers who saved waste for 6 to 12 months could receive between Rp 300,000 to Rp 700,000. Of course, these savings greatly helped customers, whether for purchasing their children's school needs or adding funds during Eid al-Fitr and Eid al-Adha.

## TURNING POINT DUE TO THE PANDEMIC

Just a few months after the waste bank began operating, the Covid-19 pandemic struck in early 2020. The government implemented policies restricting movement and interaction with

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**Of course, these savings greatly helped customers, whether for purchasing their children's school needs or adding funds during Eid al-Fitr and Eid al-Adha.**

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others to prevent the spread of the epidemic. The government's policy, known as PPKM (Enforcement of Restrictions on Community Activities), had an impact on the operation of Bersih Istiqomah Waste Bank.

The tightening policy caused the waste bank to be vacant for approximately the first year of the pandemic. Istiqomah Clean Waste Bank resumed operations in 2021. The management of the waste bank also expanded with the addition of new faces in the management structure. Several old executives resigned during the pandemic due to health reasons.

The year 2021 could be considered a turning point for Bersih Istiqomah Waste Bank with the entry of new male executives, after previously being mostly filled by women. The new executives include Hanur Basyit Zamiat and Dedi Hermawan (logistics) Agus Kamaludin (second secretary). The addition of new personnel was essential due to the increasing amount of waste managed, averaging 50 kg per month.

The following year, 2022, Bersih Istiqomah Waste Bank was able to provide profits to the “shareholders” who purchased receipts at the establishment's inception. In the same year, the waste bank also increased its activities in the digital world by creating an account on the social media platform Instagram. The main goal was to expand the network while reintroducing Istiqomah Clean Waste Bank.

In the same year, Bersih Istiqomah Waste Bank joined the Indonesian Waste Bank Association (ASOBSI), a forum for Indonesian waste banks. In November 2022, there was also a visit from WWF Indonesia to ASOBSI, announcing opportunities for assistance to submit waste bank activity proposals through the Plastic Smart City (PSC) program.

Bersih Istiqomah Waste Bank met with WWF-Indonesia when they met with ASOBSI. Finally, Bersih Istiqomah Waste Bank submitted a request by sending a pre-proposal in April 2023, with the finalization of the proposal done in July 2023. There were several assistance requests submitted, including training activity assistance, waste bank operational support such as motor vehicles and plastic pressing machines.

Other needs that were also requested included waste bank equipment and personal protective equipment (Safety), waste storage facilities, and office equipment, staff costs, and office operations. Most of these requests were approved by WWF Indonesia. For operational vehicles, motorized vehicles were requested because many waste bank customers are located on small streets or alleys.

Other equipment provided by WWF Indonesia through the PSC program included waste storage racks. Because the waste collected from customers cannot be sold immediately, the waste bank needs its own storage space before selling the waste.

Some changes have occurred in Bersih Istiqomah Waste Bank. The number of its customers continues to increase. Previously, it had 403 household customers, by 2023 it had become 427 household customers. The number of waste bank sub-unit customers also increased from 28 to 30 sub-units. The waste bank's gross turnover ranges from Rp 8 to 10 million per month.

Like waste banks elsewhere, education is also a function carried out. Waste bank executives are usually invited to provide knowledge material on waste management and processing. Sometimes, executives also offer to come to a location for socialization. In addition to transmitting knowledge, there are also economic benefits: expanding networks and adding customers.

Socialization and education that has been carried out so far include schools, community groups (neighborhood associations and community groups), and business groups such as offices, cafes, and restaurants. According to the estimates of the executives, they can provide such socialization at least twice a month.

Bersih Istiqomah Waste Bank also has facilities for waste processing although not yet complete. Most of the equipment owned comes from WWF Indonesia through the PSC program. Some waste processing equipment already available includes pressing machines.



However, these pressing machines have not yet been operationalized because they require high electricity consumption. Waste bank executives target to solve this electricity problem this year. Bersih Istiqomah Waste Bank can develop from the waste processing side, not just managing waste.

So far, Bersih Istiqomah Waste Bank has made efforts in waste processing. For example, processing organic waste to provide benefits. However, these efforts have not yet reached a commercial level. For example, making organic waste into planting media after being mixed with animal manure, eco-enzymes, and the like.

The waste bank has also started to process waste from fruit peels and vegetable stems as raw materials to make various types of soap. Starting from laundry soap, dishwashing soap, deodorant, and bath soap. These items have begun to be produced but are still limited to bartering with customers.

The next development phase prepared by Bersih Istiqomah Waste Bank is to process non-organic waste into items that can be more beneficial for customers and profitable for the waste bank. The executives also have a desire for other businesses that can support waste bank operations to ensure their sustainability.



# THE SPIRIT OF PRESERVING THE CILIWUNG RIVER

It all began with the formation of the Ciliwung Care Community (KPC) in March 2009 as a response to growing concerns about the increasing amount of waste entering the Ciliwung River. Therefore, the initial focus of this community was to urge people not to dump garbage into this important river in Java, which has a mainstream running almost 120 km, passing through Bogor Regency, Bogor City, Depok City, and DKI Jakarta.

The rapid development of houses, offices, and business areas also caused a narrowing in the Ciliwung riverbank area. This was followed by the accumulation of waste and garbage from various places being dumped into the Ciliwung River. This became a major problem when the waste clogged the water flow. Besides causing odor, it also led to floods in the riverbank areas.

The formation of this community initially faced ridicule and was considered futile. Because the habit of dumping waste into the Ciliwung River had been going on for a long time. Even if the KPC carried out clean-up activities, the amount was not comparable to what entered the river. However, this ridicule did not deter the KPC activists.

## CILIWUNG NATURALIZATION TASK FORCE

The KPC movement caught the attention of the Mayor Bima Arya of Bogor City. The Mayor then supported this movement by forming the Ciliwung Naturalization Task Force in October 2018. This task force was directly led by the mayor, with its secretary Een Irawan Putra, a KPC activist who is also the executive director of the Rekam Nusantara Foundation.

Initially, the task force members consisted of representatives from the Indonesian National Army, civil servants, and community representatives. Each team was led by the Indonesian National Army from Kodim 0606. The placement of military personnel was part of shock therapy to reduce the activities of dumping waste into the river.

As time passed, this composition was changed because military representatives and civil servants found it difficult to allocate time to participate in this task force. In June 2019, there was a drastic change in the organizational structure of the task force. The chairperson and secretary remained the same as before. However, the task force members were

<b>Institution Name</b>	Rekam Jejak Alam Nusantara Foundation
<b>Year Established</b>	2013
<b>Office Address</b>	Jl. Sempur No. 35 Sempur, Bogor Jawa Barat 16129

mostly filled by community representatives and residents living around the Ciliwung riverbank area.

The task force formed six teams responsible for 13 sub-districts along the Ciliwung Riverbank, stretching approximately 15 km in Bogor City. One of their programs was to encourage residents along the riverbank to stop dumping waste into the river. The task force had previously identified 50-56 neighborhood units (RT) prioritized for assistance in this program. With the support of the PSC program, financial assistance was provided to these priority RTs, although the number was reduced to 55.

During the early stages, the task force focused on conducting daily patrols. In addition to patrols, the task force teams also spoke with the community about why they disposed of waste in the river. It was found that they dumped waste into the river because there was no waste collection service or due to a very minimal understanding of waste and its dangers when dumped into the river.

Of course, the task force couldn't just inform the residents without offering solutions to the waste issue. Eventually, the task force communicated with the Bogor City Environmental Agency to schedule waste collection from this area. It turned out that there was no waste collection service for residents along the riverbank, especially in locations very close to the riverbank.

Although the task force had a legal basis in the form of a mayor's decree, its budget was very limited. This includes funding for facilities and infrastructure for task force duties. Therefore, its activities adapted to these conditions.





In August 2021, Bogor City declared itself the first city to participate in the Plastic Smart Cities initiative. Before this, Bogor City had issued Regional Regulation No. 61 of 2018 regulating the reduction of household waste and similar waste. Business actors and plastic bag manufacturers were also required to produce environmentally friendly plastic bags.

At that time, the Bogor City Ciliwung Naturalization Task Force, Rekam Nusantara Foundation, Bogor City Environmental Agency, and Bogor City Government agreed to support the reduction of plastic waste in the environment. This activity was supported by WWF through the Plastic Smart Cities (PSC) program.

Although the task force had legal legitimacy through a mayor's decree, there were difficulties in directly collaborating with WWF-Indonesia. After several considerations, it was agreed that the PSC program in the Ciliwung riverbank area would be conducted under the Rekam Nusantara Foundation with the support of WWF.

With WWF's support, there was a budget for the procurement of facilities and infrastructure. This included building a 3R Waste Processing Site (Reduce, Reuse, Recycle) in Mekarwangi and Bantar Kemang. The Mekarwangi Waste Processing Site was used to process low-value plastic waste into material for infiltration wells. Meanwhile, the Bantar Kemang Waste Processing Site was used to collect low-value waste which would then be sent to Mekarwangi. High-value waste would be sold to waste collectors.

In the Bantar Kemang Waste Processing Site, a small semi-permanent building was also constructed, which could be used as an organic waste processing area for maggots or composters, as well as a temporary storage area for plastic waste. With the presence of the Bantar Kemang Waste Processing Site, the task force began to encourage residents to sort waste from their homes.

## MEKARWANGI 3R WASTE PROCESSING SITE

For the construction of the Mekarwangi 3R Waste Processing Site, the construction and waste processing machines would be supported by funding from the PSC program. For land acquisition, the task force discussed it with the mayor. The mayor assisted in finding available land and it was found that there was land in Mekarwangi. After further investigation, it turned out that it was land owned by the Education Agency. Therefore, it was decided to use that land with the consideration that this waste processing site could also serve as an educational area.

The construction of the Mekarwangi 3R Waste Processing Site and Bantar Kemang began in the middle of the year and was completed by the end of 2022. The land area in Mekarwangi was approximately 5,000 square meters, although only 1,000 square meters were utilized for the new waste processing building. For other supporting facilities, such as plastic waste shredding machines, the task force collaborated with the young group "Sumpah Sampah" located in Citereup, Bogor.





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A few years earlier, “Sumpah Sampah” won a waste processing technology competition. At that time, they developed innovative technology in the form of a shredding machine, which functioned to melt plastic. Another machine functioned to mold plastic into sheets. “Sumpah Sampah” agreed to support the Mekarwangi 3R Waste Processing Site and made it a joint laboratory.

An important principle in the construction of the Mekarwangi 3R Waste Processing Site was to reduce rejected plastic waste or those with no economic value into useful alternative products. The main goal was to change the behavior of the communities around the Ciliwung riverbank and facilitate waste management into products, thus reducing waste that would end up in the Galuga Final Processing Site.

Once operational, the Mekarwangi 3R Waste Processing Site produced blocks, boards, and crates with a maximum processing capacity of 800 kg/day. The production target was to produce 6 packages, where 1 package contained 13 boards, 12 crates, and 2 cover boards in a day. The products produced were used as material for the construction of infiltration wells by businesses engaged in environmental consulting, monitoring equipment providers, environmental innovation, and community development.

Facilities and infrastructure available at the Mekarwangi 3R Waste Processing Site, besides the plastic waste processing machines into products, also included a vehicle for waste transportation. With the operation of this waste processing site, there was a need for more intensive waste sorting education for the community, especially in waste sorting matters.

One of the tasks of the task force was to assist the priority RTs in waste sorting. Starting from 12 priority RTs, plus 48 priority RTs, the total priority RTs now amounted to 60 RTs spread across 4 districts, namely East Bogor, Central Bogor, North Bogor, and Tanah Sareal.



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## TRAINING AND INFORMATION DISSEMINATION

Another activity conducted by the Task Force to preserve the Ciliwung River is through educational means. The main targets are those located near the riverbanks. One educational institution that received education and assistance is Pesantren Daarul Uluum (Islamic Boarding School).

During the mapping of waste along the Ciliwung riverbank, it was found that the waste generated by this pesantren was quite significant and usually ended up in the Ciliwung River. The Task Force then provided understanding to the pesantren management regarding this waste issue.

The pesantren management became aware of the waste problem. Eventually, there was a Memorandum of Understanding (MOU) between Pesantren Daarul Uluum, Rekam Nusantara, and WWF. Through the WWF’s PSC program, there was support for facilities and infrastructure so that Pesantren Darul Ulum could make changes in waste management.

According to data from the Rekam Nusantara Foundation, at least 420 students, 50 teachers, and management personnel residing within the Ciliwung ecosystem were exposed to information about river waste and plastic issues. In 2024, the pesantren is targeted to be able to manage its waste.





“ **The main aim is to change the behavior of people around the Ciliwung riverbanks and facilitate the management of waste into products to reduce waste that will end up at the final processing site.** ”

Another institution that also received education from the Task Force and Rekam Nusantara is YAPIS located in Tanah Sereal Village. A total of 72 vocational high school students participated in educational activities conducted by the Bogor City PSC team, addressing river, waste, and plastic issues, and inviting them to reflect on sustainable living behaviors.

Another form of education conducted by the Rekam Nusantara Foundation is the creation of communication products such as films, digital content, campaigns, community activities, and articles with creative and informative messaging approaches. Broadly, educational facilities consist of four types:

**Educational Films:** Making short films or documentaries about waste management that are attractive and informative. These films can highlight plastic waste issues, recycling techniques, or success stories of communities in managing waste.

**Digital Content:** Creating digital content such as animated videos, infographics, or social media campaigns emphasizing

the importance of waste management and ways that can be done by the community.

**Awareness Campaigns:** Using awareness campaigns through posters, leaflets, and banners highlighting important messages about waste management and its environmental impacts.

**Community Activities:** Holding community activities such as workshops, seminars, or public discussions on waste management to increase awareness and knowledge of the community.

For communication products, the results are disseminated through social media (Instagram, YouTube, TikTok) by Rekam Nusantara and WWF-Indonesia. Until December 2023, Rekam Nusantara had produced 40 videos, 23 Instagram digital content (November 2023), and conducted 4 educational activities in schools. In 2022 alone, the total digital content reached at least 44,045 people.

## EVALUATION AND DEVELOPMENT PLAN

Several changes can be noted after the formation of the KPC in 2009, which later became the Task Force in 2018 and declared a smart city program in 2022. One of them is the change in community patterns regarding waste.

When the Task Force mapped the situation along the Ciliwung riverbank, at least 97 waste accumulation points or piles with sizes of 2 to 3 meters were found. The number



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has been decreasing and now perhaps only 1-2 can be found after education, patrols, and regular waste collection by the Environmental Agency.

The mindset of the community in disposing of waste has also begun to change. It is now rare to find residents dumping waste into the Ciliwung. The Task Force is quite confident that this practice has decreased by about 90 percent from the initial conditions before the Task Force and concrete actions from the local government.

However, it is still possible that the past bad practices still occur. Because there are still stubborn residents who dispose of waste in the river. But there are also those done by residents outside the riverbank area usually dumping waste from bridges crossing the Ciliwung. There are quite a lot of bridges like this in Bogor City.

The Task Force still conducts regular patrols to detect new waste accumulation points. If there are residents on the riverbank who are still stubborn, the origin can be easily determined so that the residents can be informed and warned. This issue can be easily detected by residents by looking at the location points where waste is found.

The Task Force once found residents dumping waste into the Ciliwung River. The Task Force easily found the perpetrators. Although the owner initially denied doing it, the Task Force had very clear evidence by looking at the location of the waste. In addition, also through the identification of the waste dumped with the economic profile matching their household.

Residents are now more cautious because there are sanctions for waste disposal regulated in Regional Regulation Number 1 of 2021. The regulation prohibits dumping waste into the river. Offenders can face minor penalties if they do so. The government began to enforce this sanction after waste management facilities began to be fulfilled.

As part of future development, the Mekarwangi 3R Waste Processing Site also plans to increase the sources of its raw materials. So far, the waste entering and processed at the Mekarwangi 3R Waste Processing Site has still been focused on waste generated and sorted by RT prioritized by the Task Force program.

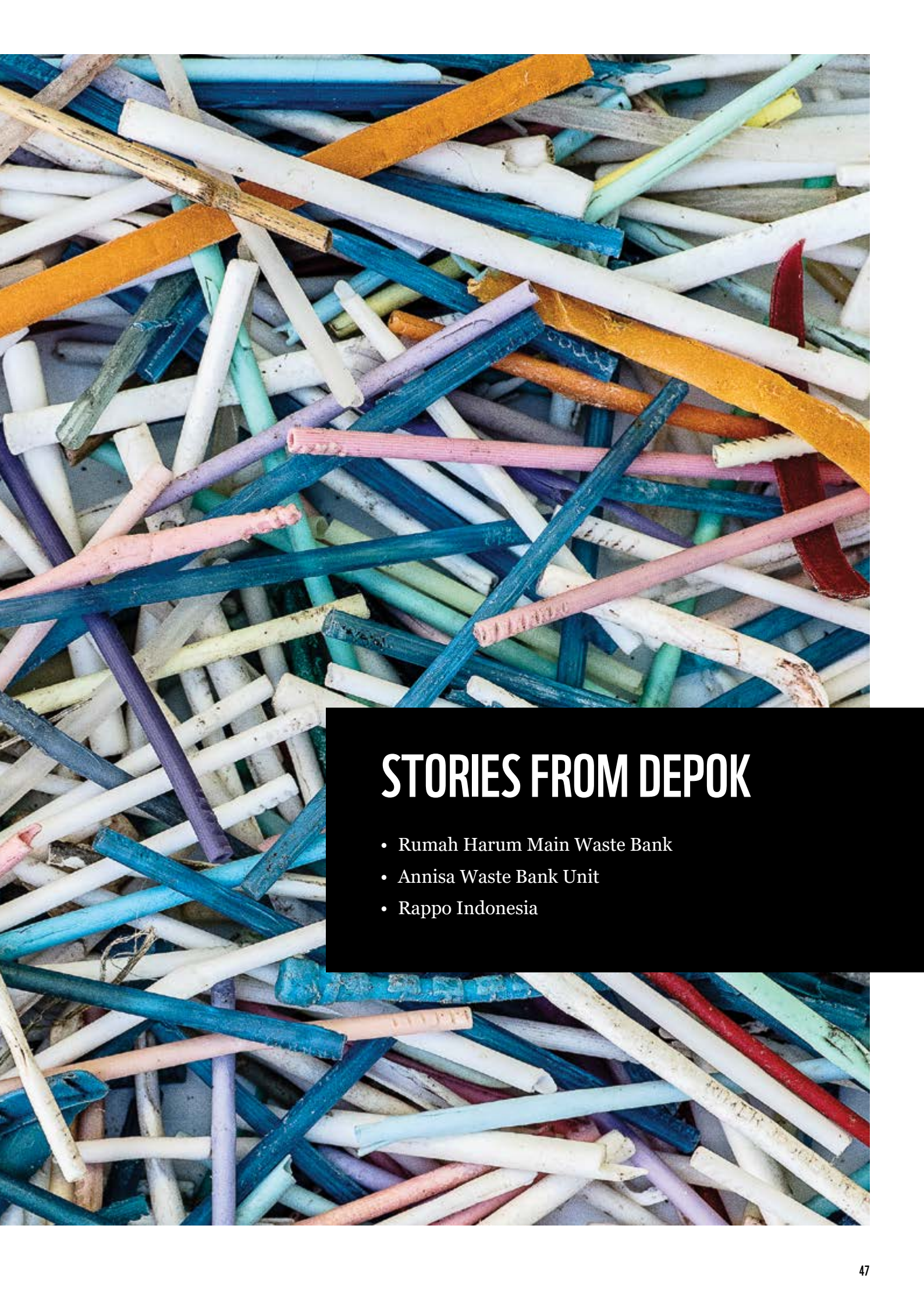
The policy regarding the acceptance of waste entering and processed at the Mekarwangi 3R Waste Processing Site so far has truly looked at the processing machine capabilities currently available. With limited capacity, automatically the amount of raw material also adjusts. In addition, factors considered are the market absorption capacity that can accommodate its processed products.





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# STORIES FROM DEPOK

- Rumah Harum Main Waste Bank
- Annisa Waste Bank Unit
- Rappo Indonesia



# RISE AND FALL OF “RUMAH HARUM” WASTE BANK

It all started with a waste bank socialization activity in early 2013 led by one of the waste bank activists in Depok City. Hermansyah, along with four representatives from four districts in Depok City, West Java, attended the event which explained the types of waste and how the waste bank program worked to handle both organic and non-organic waste.

The socialization inspired Hermansyah, as well as his four colleagues, to delve into the issue of waste. They agreed to start by raising awareness among the local community about the problems caused by waste and how waste banks could address them. The socialization efforts began in January 2013.

The waste bank socialization was conducted through various methods, including Islamic study groups, neighborhood association leaders, and engaging community leaders. Some prospective legislative candidates also sought assistance in raising awareness about waste in their constituencies. Unexpectedly, the community responded positively, and some expressed interest in forming waste bank units.

During the early stages, questions arose about where the waste collected from the community would be taken if waste bank units were established. The idea at the time was to have waste bank units sell directly to stalls. However, this idea was not chosen due to concerns about continuity and consistency.

After considering various factors, it was decided to establish a central waste bank at the district level. Hermansyah then created the Rumah Harum Main Waste Bank (BSI Cilodong). This idea was somewhat daring because, at the time, he did not fully understand the types of waste, sorting methods, or sales plans. He started the central waste bank with a box truck and a 100m<sup>2</sup> warehouse from a former Quran distribution business.

Hermansyah's four colleagues were unable to establish a central waste bank, so waste from the waste bank units in their areas was sent to BSI Cilodong. The collected waste was stored in the warehouse and sorted based on its origin district. The commitment made at the time was that the waste bank was ready to collect as soon as the waste was available.

<b>Institution Name</b>	Rumah Harum Main Waste Bank
<b>Year Established</b>	2013
<b>Office Address</b>	Jl. Merdeka No.1, RT.05/RW.01, Abadijaya, Kec. Sukmajaya, Kota Depok, West Java 16411
<b>Customers</b>	110 Waste Bank Units
<b>Managed waste</b>	60 - 80 ton per month

During this initial period, Hermansyah and his team focused on collecting waste from various points. Payment for waste savings would be made during festive occasions. After approximately three months of operation, BSI Cilodong had accumulated enough waste to fill the warehouse. The next task was figuring out how to sell it.

Selling waste turned out to be more challenging than Hermansyah had imagined. He had tried to find information about waste sales locations, but to no avail. As the warehouse began to fill up, he had no choice but to quickly find a waste collection site. The warehouse needed to be emptied, and there had to be income to pay the customers.

Hermansyah used unconventional methods to find waste collection sites. He started by following trucks carrying stacks of waste. As expected, the trucks were heading to waste collection sites, which turned out to be located within Depok. This method eventually led him to discover the waste collection sites.

After identifying the collection site, Hermansyah then brought the waste from BSI Cilodong there. Selling waste was not as straightforward as he had thought. The collectors only accepted certain types of waste with clear classifications. In the first sale, only a small amount of waste was sold because the waste was still mixed.



## INITIAL BUSINESS CHALLENGES

Initially, BSI Cilodong was managed by Hermansyah and one of his close associates. This number was clearly inadequate to handle a waste bank operating in at least four districts. They needed someone who understood waste, from sorting to selling. This issue was resolved after Hermansyah found someone experienced in waste sorting who had previously worked at the Bantar Gebang Final Disposal Site in Bekasi, West Java.

Hermansyah gave full authority to the new team. He only came occasionally to check. Without Hermansyah's knowledge, the new management team often sold waste in secret. This serious issue was discovered when it was time to pay customers.

As usual, waste bank customers withdrew their savings around festive occasions like Eid. In 2014, BSI Cilodong had to provide Rp 20 million to pay its customers. When Hermansyah checked the waste bank, the money was not there, even though the warehouse was empty because of the illicit actions of the new waste bank management.

Facing this difficult situation, Hermansyah eventually chose to disclose the problems he faced to other management members and the customers. He explained the difficulties, from the lack of knowledge about waste management to the new management's betrayal of trust.

Some customers understood the difficulties and agreed to postpone the payment. However, other customers urgently needed the money. The BSI Cilodong management then focused on finding loans to pay those customers in urgent need. After this incident, Hermansyah decided to directly handle the waste bank operations.

## FROM BSI CILODONG TO RUMAH HARUM

BSI Cilodong then expanded its customer base by enhancing its services to customers. If residents requested waste awareness sessions, the management did not hesitate to attend even if the location was far. During these sessions, it was communicated that the waste bank was also committed to purchasing their waste. The hope was to build a good reputation for this central waste bank.

In 2015, Hermansyah had the opportunity from the Depok City Government to participate in a study tour to Osaki City, Japan, for 14 days to learn about waste management based on sorting and non-incinerator waste management. The study tour provided him with a deeper understanding of waste types and their management.

In 2015, BSI Cilodong's efforts to increase its customer base became a reality. They were able to gather waste from 200 - 300 collection points. This number continued to grow and peaked in 2017. Simultaneously, several of Hermansyah's colleagues who operated central waste banks collapsed. Their customers were redirected to BSI Cilodong. With an expanding coverage area, BSI Cilodong then changed its name to BSI Depok Bersih in 2018.

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**If residents requested waste awareness sessions, the management did not hesitate to attend even if the location was far.**

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With this new name, waste collection activities became more intensive and could extend into the night. However, this had an impact on the health of waste bank workers and was one of the reasons for BSI Depok Bersih's near collapse in early 2018. The operational costs borne by the waste bank did not match the revenue generated. The waste bank also declared its inability to transport all waste from the waste bank units.

Hermansyah attempted to save the waste bank by meeting with the Mayor of Depok, Nurmahmudi Ismail, and several institutions, including Zakat Institutions. His efforts were not in vain. The Zakat Institution saw the waste bank as a worthy initiative to support. The support in the form of funds from the Zakat Institution was like a lifeline for the waste bank.

The new funds obtained from the Zakat institution were used to pay off the outstanding payments to their hundreds of customers. Learning from previous experiences, BSI realized they had to be realistic about the number of customers they could serve. Some of their customers were eventually redirected to several newly established waste bank units in Depok. That same year, BSI Depok Bersih changed its name to Rumah Harum Main Waste Bank.

## COVID-19 AND WASTE DONATIONS

The crisis in 2017 forced Rumah Harum to change some of its working patterns. After initially having over 200 customers, by 2018, the number had decreased to 60 Waste Bank Units, then increased to 110 Waste Bank Units by 2023. Additionally, there were more than 1000 individual customers because each Waste Bank Unit had individual customers ranging from 30 to 100 people.

There are several types of customers at BSI Rumah Harum. Regular customers are those who deposit waste and receive payment. However, there is another type of customer who donates their waste to BSI instead of selling it. The concept of waste donation began to be used in 2020 shortly after Indonesia was hit by the Covid-19 pandemic.

The pandemic forced people to limit their travel or interactions with others. This situation made it impossible for waste bank units to operate effectively. However, waste never ceased. To fill the gap caused by the absence of waste bank units, BSI Rumah Harum introduced the concept of waste donation.

People with non-organic waste who wished to donate could contact BSI. Shortly afterward, a team from BSI would come to pick up the waste from house to house. Typically, those who donate their waste are residents living in residential areas. Some residents also donated their waste by sending it through courier services.

After the pandemic, BSI Rumah Harum continued to grow and gain recognition. Until 2023, the waste managed was 60 to 80 tonnes per month with a turnover of Rp 100 - 150 million per month. Its educational function also continued. Typically, educational visits came from educational





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“ **There, they learned about circular economy, financial management, and business development.** ”

institutions and government agencies interested in learning about waste management. The Ministry of Public Works and Housing and the Ministry of Environment and Forestry have visited this waste bank.

BSI Rumah Harum also received awards for its contributions to waste management. In 2017, the Depok City Government awarded them for their environmental awareness. In December 2023, there was also an award from the West Java Provincial Government for community-based waste banks, presented during the Flora and Fauna Creation Commemoration.

BSI Rumah Harum then had the opportunity to partner with WWF-Indonesia through the Plastic Smart Cities Program in November 2022. Under this scheme, operational assistance was provided in the form of transportation vehicles. This increased the fleet owned by this waste bank. The support vehicles enabled the sorting of non-organic waste to reach 1-2 tonnes per day.

Another assistance provided was in the form of machines supporting plastic waste processing. With these tools, BSI Rumah Harum not only collected non-organic waste and sold it to collectors but also intended to process plastic waste to add value to it by turning it into products.

Apart from facilities and infrastructure, another important support from WWF was the strengthening of human resources for the management of this central waste bank. One of the training provided was sending BSI teams to attend management education at PPM School of Management. There, they learned about circular economy, financial management, and business development.



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## EFFORTS TO ESTABLISH A COOPERATIVE

BSI Rumah Harum formulated several future development plans. One of them is to further expand the number of customers. This is because there are still many customers who have not been served by this central waste bank. With increasing promotion through social media, requests for waste collection are now also communicated through BSI Rumah Harum's social media.

There are two objectives to be achieved with the addition of these customers. First, BSI Rumah Harum aims to increase the number of customers who can be served, which is more feasible with the presence of new facilities and infrastructure. Second, the addition of these customers automatically increases the volume of waste that can be collected, thereby reducing the amount that ends up in landfills.

Another agenda for BSI Rumah Harum's development is related to financial issues. In the future, there will be a separation between the operational central waste bank and the institution managing its finances. Therefore, the central waste bank will focus on waste processing, while financial management for customers will be handled by a separate financial institution in the form of a cooperative.



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# STARTING FROM THE GREY BUCKET MOVEMENT

Like many other places in Indonesia, RW 19 of Baktijaya Village, Sukmajaya Sub-district, Depok City, West Java, has a problem with waste. Especially organic waste such as food scraps, fruits, and other similar items, which account for about 60% of household waste. All this waste usually ends up in the trash, causing unpleasant odors, before finally being taken to the final disposal site (TPA).

The Depok City Environmental and Sanitation Agency has conducted several socializations to address this waste problem but with little success. Agus Firman, who was the Chairman of RW 19 at the time, finally took the initiative to launch a movement to handle organic waste. The goal was not to eliminate it because it is not possible but to reduce the amount that would enter the final disposal site.

<b>Institution Name</b>	Annisa Waste Bank Unit
<b>Year Established</b>	2018
<b>Office Address</b>	Jl. Gama Setia Bar. V, Bakti Jaya, Kec. Sukmajaya, Kota Depok, Jawa Barat 16418
<b>Customers</b>	103 Customers
<b>Managed waste</b>	500 – 800 kg waste per month



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Although Agus Firman was the chairman of RW 19, he initiated the movement from the level where he lived, which was RT 3. When starting this effort at the end of 2017, he, along with his wife and RT officials, conducted socializations about non-organic waste on various occasions, ranging from social gatherings, religious study groups, and other community events.

The method used by the RT officials to carry out this movement was to ask residents to separate organic waste from other types of waste. The waste would then be collected in one place before being picked up by RW officials. Officials provided gray buckets at several points where residents could place their organic waste. That's why initially this activity was called the Grey Bucket Movement.

The grey bucket project was not without challenges. Several times, the buckets placed at various points disappeared. RT officials had to replace them with new buckets. To prevent similar cases from happening again, the buckets were briefly chained to prevent easy theft. However, this idea was not continued because it made it difficult for officials during waste collection.

The Grey Bucket Movement collaborated with the Depok City Environmental and Sanitation Agency. Organic waste from residents was then collected twice a week and taken to the Waste Processing Unit (UPS) at the district level. In return, UPS provided fertilizer to residents. Officials distributed this fertilizer to residents who contributed organic waste.

## BIRTH OF THE WASTE BANK

Although it faced some challenges, the organic waste management project in RT 3 could be considered successful. The visible result was that the amount of organic waste generated by households that had to be collected by sanitation workers and usually ended up in the trash was decreasing. Agus Firman applied the practices at the RT level to RW 19.

After organic waste management could run smoothly, Agus and the RW officials looked into non-organic waste, such as cardboard and plastic, which were also abundant. At that time, the idea that crossed the officials' minds was to establish a waste bank like other areas in Depok to address this type of waste that could be processed.

Agus Firman's initiative as the RW chairman received support from residents who also wanted to reduce waste accumulation in their own homes. With the support of all PKK (Family Welfare Empowerment) cadres, the waste bank officially started operating in March 2018.

The waste bank was named Annisa Waste Bank. The reason was simple. Many community activities in RW 19 used the name Annisa, from Integrated Health Post (Posyandu) to Religious Study Groups, because all its cadres and activists were women.



At the opening, Annisa Waste Bank was assisted by 3 volunteers from Tugu Waste Bank, plus 10 PKK cadres. Waste weighing was carried out at the RW office. It was scheduled once a month because the number of customers was still small. The weighing schedule increased as the number of customers grew later in the day.

After the waste bank had been operating for a few months, there was a request for it to open once a week. However, because most of the BSA team were housewives over 50 years old with many responsibilities in their own families, the number of weighing services was increased to twice a month.

The collected waste was sorted based on its type beforehand. This was because the price of non-organic waste depended on its type. After that, all residents' waste savings were recorded by officials on a savings card. The residents' waste savings were then sold to waste collectors.

### Composition of Annisa Waste Bank Management

<b>Advisor</b>	Agus Firman
<b>Chairperson</b>	Ratih Dyah Kumalasari
<b>Vice Chairperson</b>	Tuty Mardiani
<b>Secretary/Public Relations</b>	Ariyanti Sukarnosiwi
<b>Treasurer</b>	Dian Amelia
<b>Members</b>	Retno Kusumawati Esty Andari Kartika Handayani Wang-wang Juangsah Sutarsih Hayati Jemali Kasiaty Nurul Husna D. Anggraheny Robin Ernest

## TRASH DONATION POST

Not all residents can weigh their trash according to the schedule of the waste bank, which only occurs once every two months. To address this issue, the idea of establishing a Trash Donation Post emerged. This idea was proposed when residents met with Suparyono, a member of the Depok City DPRD (Regional People's Representative Council), who was conducting a recess and holding a meeting with the residents. The idea was well received.



Suparyono enthusiastically welcomed the idea and discussed it further. He is concerned about waste issues and has previously conducted a comparative study on waste management in Japan. The waste bank management was then asked to submit a proposal for the Trash Donation Post. Shortly after it was submitted, the request was approved, and the funds were disbursed.

Initially, the plan was to construct a building similar to the main waste bank, which is a large warehouse. However, this plan did not align with the waste bank association's desires. Eventually, RW 19 (Neighborhood Unit 19) was given the freedom to design it themselves. With the assistance of an architect, a drop box was created, adapted from similar bins used abroad.

There was some resistance from residents during the socialization process regarding the construction of the Trash Donation Post. At that time, residents perceived that it would lead to an increase in trash accumulation, unpleasant odors, and an influx of flies.

The management then approached the residents, explaining that the collected trash would be clean and would not emit odors. Additionally, the trash would be promptly collected by the main Waste Bank regularly or when it accumulates.

To reduce resistance from residents, a solution was sought to remove the word "Trash" from the Trash Donation Post. After discussions, it was eventually decided to rename it the Recycling Zone. The Recycling Zone was built and inaugurated in January 2020 by Suparyono, who provided the Aspiration Fund.

After the establishment of the Recycling Zone, the Waste Bank Association participated in the 3R (Reduce - Reuse - Recycle) Competition held by the Depok City Environmental Agency in 2020. Despite limitations due to its young age of two years, the waste bank association won third place in the competition.



## PANDEMIC: CHALLENGES AND OPPORTUNITIES

Several months after the construction of the Recycling Zone, the Covid-19 pandemic occurred. This outbreak prompted the government to restrict the movement of the population through PPKM (Community Activity Restrictions). Human interactions were also minimized. The strict limitations during the pandemic prevented the waste bank from operating extensively.

Among the management, there were concerns about health threats. This was because there were quite a few deaths from Covid in the area. This fact made the waste bank management very worried. Consequently, routine weighing activities, where residents deposit their trash and it is recorded in their savings account, were suspended.

Although there were no waste bank activities, residents still deposited their trash in the colorful drop boxes provided. The trash was still sorted and sold by the waste bank management. Since it was unknown who deposited the trash, the proceeds from the sale were used collectively for community activities.

After two years of the pandemic, the situation began to improve. Covid-19 infection cases decreased. Restrictions on residents' activities also began to ease. The Waste Bank Association then decided to resume its operations in 2022.

## INTRODUCTION AND COLLABORATION WITH WWF INDIRECTLY

Initially, WWF collaborated with KPC (Ciliwung Care Community) and searched for waste banks along the Ciliwung River. Coincidentally, the Annisa Waste Bank was located along the banks of the Ciliwung River. This led the Annisa Waste Bank to participate in WWF's Plastic Smart Cities program.

Through this collaboration, the Annisa Waste Bank received support in terms of infrastructure for waste management and processing into secondary products that could be utilized. Donated equipment included shredding machines, ovens, and plastic shredders. Other assistance included funding for operational vehicles used for waste collection and the construction of waste bank facilities.

Operational vehicles greatly assisted waste bank operations. Regarding waste processing, maximum efficiency has not yet been achieved. Currently, it is still in the trial phase to process waste into reusable products.

Another form of support provided by WWF is to enhance the skills of waste bank management to effectively manage both waste management and non-organic waste processing. Several training sessions related to waste processing were conducted. For example, the management was trained at



effective waste processing facilities that had similar tools and equipment as the Anissa Waste Bank. There were also training sessions held at the Annisa Waste Bank with external speakers.

As a quid pro quo, waste banks must report the amount of waste collected from the community and report it to WWF every month. As part of the Plastic Smart Cities program, WWF would measure how much plastic waste has been collected and prevented from small disposal sites.

## EDUCATION AND DEVELOPMENT

The drop box in the Recycling Zone and the shredding machine have become attractions for visits to the Waste Bank Association (BSA). Visitors come from various backgrounds, including elementary and high school students, as well as environmental departments from other districts and cities. Visits to the BSA have been occurring since 2023. Student visits are usually related to the P5 program (Strengthening Student Pancasila Profile Project) within the Independent Learning Curriculum.

The Strengthening Student Pancasila Profile Project is an interdisciplinary learning process aimed at observing and finding solutions to environmental issues. The project is designed to enable students to investigate, problem-solve, make decisions, and produce actions or products.

In this program, educators must prepare facilities and infrastructure to achieve the P5 program's objectives. Students can participate in educational visits to the Waste Bank and also create recycling products using waste materials.

The BSA offers waste education programs for students to meet the needs of the P5 Program in the Independent Curriculum at an affordable cost. Activities available at BS

Annisa include identifying types of waste, sorting waste, demonstrating the plastic shredding process, and making reusable products from recycled materials such as making bags from t-shirts, photo frames, and tissue holders.

Many students participate in this program at BSA. The number of students who have visited the waste bank includes 97 students from SD Harjamukti, 225 students from SDIT Raflesia, and 313 students from SD Baktijaya IV. Through these visits, students can learn about different types of waste, practice waste sorting, understand the process of shredding waste, and be creative with waste products.

After approximately five years of operation, BSA now has 103 customers. Initially, customers were only from RW 19, but now there are an additional 17 from RW 18. The waste bank management team currently consists of approximately 15 people.

There is a lot of non-organic waste handled by the waste bank, and all of it can be processed. However, the BSA management will soon focus more on processing plastic waste. After processing, it will be turned into products that can be commercialized as additional income for the waste bank.

There has been some processing of plastic waste. Some are turned into brooches, clock materials, conveyor belts, and chair mats. Other products that will be attempted to be made include reusable bags, utilizing the sewing skills of the management team.

This processing will continue to be developed into other products. With increasing skills through various training provided by WWF, the range of products that can be produced will be more diverse. Additionally, there is still equipment that needs to be equipped to produce goods from non-organic waste materials.



# UPCYCLING AND UPSKILLING: EMPOWERING WOMEN IN THE FIGHT AGAINST PLASTIC

Akmal Idrus works as a TV presenter at TVRI Makassar. In addition to reading the news on screen, he often covers various topics. His routine suddenly changed after Indonesia was hit by Covid-19 in March 2020. The government implemented the PPKM (Enforcement of Restrictions on Community Activities) policy to prevent the spread of the virus. This policy also limited Akmal's activities in the field as before.

There are two sides to Covid-19, first discovered in Wuhan, China, and then spread globally as a pandemic. One is that the air became cleaner due to fewer people and vehicles on the roads. However, another impact that cannot be ignored is the increased production of plastic waste due to the rise in online shopping activities.

The increase in plastic waste worried Akmal. He conducted small-scale research on this issue by visiting the Antang Final Disposal Site in Makassar. His concerns were validated. Plastic bag waste was abundant due to its high usage in the community.

Unlike other plastic waste such as bottles, plastic bags often end up in the landfill because no scavengers are willing to collect them, primarily due to their low selling price. The abundance of plastic waste, including those ending up in the Antang landfill, has worrisome environmental impacts.

In addition to ending up in landfills, a significant amount of plastic bag waste enters rivers and oceans. Several surveys have shown that microplastic content from plastic waste is commonly found in fish. This is a very worrying fact because Makassar is a coastal area, and its residents consume a lot of fish.

## EMBRYO OF RAPPO INDONESIA

These facts prompted Akmal's interest in plastic bag waste. He began thinking of ways to recycle and turn it into usable products. Initially, he experimented with recycling waste using a simple tool, an iron.

<b>Institution Name</b>	Rappo Indonesia
<b>Year Established</b>	2021
<b>Office Address</b>	KP. Bojong Lio No 34 RT 02 RW 28 Sukamaju, Cilodong, Depok, West Java
<b>Partners</b>	At least 29 women were trained, 10 of whom became sewing partners.
<b>Managed waste</b>	74,548 pieces of processed plastic trash

The experiment involved stacking plastic bag waste in layers and then ironing them. The results were not optimal using this simple method. One of the issues was that the basic material of the plastic was still visible, including any logos on it. The processed plastic bags were then sewn back together to create plastic bags again.

This experiment gave Akmal an initial idea of what business he could start with plastic bag waste. He began thinking about how this idea could be translated into a business plan. The opportunity came when he received a fellowship for business idea incubation in 2021.

The incubation activities took place in Bali for about a year. During this training period, Akmal traveled back and forth between Makassar and Bali. It was during this training period that he created his prototype product under the name Rappo Indonesia in 2021. "Rappo" means "fruit" in the Makassar language.

As a fellowship participant, Akmal not only needed to create products from processed plastic bag waste but also incorporate an aspect of women's empowerment into his new business plan. After scouting several locations in Makassar, he found a suitable location.



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Akmal chose the fishing village of Untia, located in the Biringkanaya District of Makassar City. Initially, Akmal and his team at Rappo Indonesia conducted a campaign in the Untia village about the importance of reducing the use of plastic bag waste.

To encourage residents to participate in waste reduction, Rappo Indonesia introduced a “plastic waste exchange program.” In this scheme, residents were asked to collect plastic bag waste. In return, they would receive kitchen necessities such as pots, kettles, soap dishes, and other same items.

In this waste exchange program, the unit of measurement was sheets of plastic bag waste. So, the items were priced according to the number of sheets. For example, one item might be priced at 30 sheets of plastic bag waste. If a resident wanted that item, they had to deposit that number of plastic bag waste sheets.

## REPLICATION PROGRAM IN DEPOK

The success of the Rappo program in Makassar prompted a replication initiative in Depok, West Java in 2022. The initial step taken was to conduct location research in the Suka Maju village, Cilodong, Bojong. Some of the tools used in the Rappo Indonesia project in Makassar were also applied in Depok.

The Rappo Indonesia program in Makassar received support from WWF-Indonesia through the Plastic Smart Cities program. Similar support was also provided by WWF for the PSC program in the Bojonglele village, Suka Maju, Cilodong, Depok. WWF assisted Rappo Indonesia in Depok from the outset, preparing training materials purchasing sewing machines, renting houses, and so forth.

Although the concept was based on what was done in Makassar, several adjustments were made due to different circumstances. In the Untia village, the space available to Rappo Indonesia was extensive, both indoors and outdoors. The situation in Depok was entirely different. In Depok, the residents’ homes were densely packed, which affected the training process. Thus, the number of participants in the training was limited.

The reception of Depok residents differed regarding the program offered by Rappo Indonesia. In the Makassar program, the “trash exchange for goods” program was introduced. However, this approach was not suitable for Depok residents. After studying this, Depok residents preferred the “trash exchange for money” program. This led to the birth of the “Plastic to Cash” program.

Initially, few were interested in joining this program. However, after three months, more residents began collecting plastic bag waste. This was because Rappo Indonesia’s offer was more attractive compared to selling to waste banks. While the waste bank offered 300 per kilogram of plastic bag waste, Rappo offered Rp 300 per large-sized plastic bag sheet.





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In acquiring plastic bag waste, Rappo didn't rely solely on waste collection from residents. Rappo also purchased plastic bag waste from the Rumah Harum Waste Bank in Depok, which also received support from WWF-Indonesia through the PSC program. Rumah Harum Waste Bank also allowed Rappo Indonesia to buy directly from residents.

In Depok, the products produced from processed plastic bag waste were similar to those in Makassar, focusing on bag production. The difference lies in the shape and target market. In Depok, Rappo developed three new products. One of them is a sporty bag for male users, and another is a school bag for children. The remaining approximately 15 products are modifications of products produced by Rappo in Makassar.

## MARKET EXPANSION AND RESEARCH FOCUS

Consistent with the initial commitment upon its establishment, one of Rappo Indonesia's goals is to reduce the amount of plastic bag waste entering landfills. Since July 2022, the total plastic bag waste collected from residents has amounted to 74,548 pieces. Rappo then transforms this plastic bag waste into bags. From January 2023 to August 2023, at least 5,420 pieces of products were produced from this plastic bag waste.

The processing of plastic bag waste involves local communities, from collecting raw plastic bag waste to processing it into products. Thus, the surrounding community also benefits economically from the Rappo Indonesia program supported by WWF-Indonesia.



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“ **The processing of plastic bag waste involves local communities, from collecting raw plastic bag waste to processing it into products.** ”

The income received by Rappo Indonesia’s sewing partners averages Rp 2,000,000 - 3,000,000 per month. Thus, this program provides decent job opportunities for women. Until November 2023, at least 12 individuals have been trained at the Rappo Impact Center in Depok, while 10 sewing partners, and 17 individuals trained at the Rappo Impact Center in Makassar.

After approximately three years of operation, Rappo Indonesia continues to grow. Currently, there are about 15 staff members at the Rappo Indonesia headquarters in Makassar, while there are 5 at the Depok office. Some of the workers at the Depok office are on contract.

In 2024, Rappo Indonesia plans to focus on expanding product sales and research and development (R&D) to produce new products from processed plastic bag waste. With this plan, the production volume will also increase. As a result, an increase in the amount of raw plastic bag waste and sewing partners will be needed to produce these products.




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PLASTIC SMART CITIES (PSC)  
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STORIES THAT ARE STITCHED  
TOGETHER INTO A NARRATIVE  
OF BEST PRACTICES, WHICH CAN  
SERVE AS LESSONS FOR THE  
ACTORS AND OTHER COMMUNITY  
GROUPS IN BUILDING EFFORTS TO  
HANDLE PLASTIC WASTE.**

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