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## Formation of Waste Care Cadres Through A Community-Based Waste Bank Institution

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### Abstract

Rubbish Still become problem crucial that must be handled. Production increasing rubbish day the more increase make Power accommodate landfill (Place Final Disposal) waste Already exceed its capacity. For that, then management rubbish No Again only become not quite enough answer government, but it is also necessary awareness and effort real public in deal with it. Problems found is Still lack of management rubbish based organized community with OK, wrong attempt to get it done with partner is increase participation public in management rubbish in a way independent through formation cadre care trash that will become Waste Bank Manager at RT 04 RW 05 Subdistrict Mangunsari Subdistrict Gunungpati, Semarang City. Suite activity done start from stage preparation, stage implementation, and stages evaluation. From activities devotion This obtained results ie growing awareness and participation active partner in manage rubbish in a way independent, increasing knowledge and skills partner in managing waste banks, as well realization readiness partner in establishing a waste bank in its area.

**Keywords:** waste bank, cadres, community, care waste, management

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### INTRODUCTION

Management trash in Indonesia is still there become attention big government due to production volume rubbish always increase from year to the year that caused it landfill capacity (Place Final Disposal) Waste No Again capable For accommodate it [1]. Based on data from the Ministry of Environment and Forestry (KLHK), up to with February 2019 already There is about 64 million tonnes of stockpiles waste that Indonesia produces every year the year with amount percentage namely 60% of waste transported and deposited in landfills, 10% waste it 's been cycled reworked, and about 30% of the waste is not managed and polluted environment [2]. Moreover again in the trash plastic ones don't only buried on land and difficult For decomposed, but also pollutes ocean and become threat for ecosystem sea. As a maritime country, Indonesia produces 3.22 million tons of waste plastic ones don't managed with well and around 0.48-1.29 million tons constitute rubbish plastic. [3]

Production originating waste from companies, offices and homes ladder generally No processed moreover formerly before transported to landfill. This matter cause no landfill become receptacle For collect and hoard rubbish only, but also have function For manage and recycle repeat rubbish. In Semarang City, Jatibarang TPA as the largest landfill in Central Java which accommodates 70% of Semarang City's waste with a volume of 800 tons waste per day do series effort For processing trash so you can utilized return. Management efforts rubbish done with method composting, utilization of Methane Gas (CH<sub>4</sub>), reduction rubbish with grazing livestock at the landfill site, and manufacturing canteen with payment use plastic [4].

Although Thus, the efforts made by TPA Jatibarang This Not yet Can parse problem waste in Semarang City optimally. Apart from because many trash is a must processed, also because of the recycling process repeat what you haven't yet evenly and maximally [5]. For that, then the cycle process repeat rubbish need maximizing role three group, ie current top (*upstream*), current middle (*midstream*), and current bottom (*downstream*), which starts from scavengers, waste banks, collectors, etc factory cycle repeat.

Garbage bank is one of solution suggested alternative can reduce heap waste in landfill [6] . Through waste banks, the community invited For care trash to get it realize quality a clean, healthy environment and more Good. Apart from that, waste banks can also be used become receptacle For manage rubbish House stairs, so No Again just become threat sustainability environment, however precisely can bring benefit economy for citizens [7], [8] . As in the case of the managed waste bank in Makassar City in a way good and professional so capable scooped up profit amounting to 150 million rupiah per month.

For create a waste bank, then there are 2 (two) approaches The main thing is that you can done, ie approach *top down* (from on to bottom) and approach *bottom up* (from lower to on ). The usual top down approach involve government and related *stakeholders* in initiate and mobilize public in creation of a waste bank, meanwhile approach *bottom up* involve participation public in plan, implement, and evaluate activities at the waste bank in a way independently [9], [10] . In order to make it happen cadre care trash, then the second approach (bottom *up*) is considered more effective and sustainable because originate from awareness inhabitant For move in managing and developing waste banks.

Awareness and responsibility inhabitant usually more easy appear if they own the same problems and interests. In terms of this, group community based in Rukun Neighbors / Community Units (RT/RW) are group society can motivated and accompanied in a way effective in formation of waste banks and cadres care rubbish. This matter Because they involved in activity daily in a way intensive in period quite a long time. Various problem social, cultural and environmental they facing together every day and looking for the solution in a way together too. Like in RT 04 RW 05 Subdistrict Mangunsari, bear it responsibility and solidarity social Still awakened with tight, though most from its citizens No local residents, however public migrants in search livelihood in Semarang City.

Although so, still there is a number of problems faced by residents of RT 04 RW 05 Kelurahan Mangunsari is categorized in 2 aspects, namely aspect source Power people and aspects activity. In aspect source Power humans, residents of RT 04 RW 05 not yet own awareness in management community - based waste management \_ rubbish Still nature conventional ie dump-lift-transport and only depend on officer carrier trash, and residents Not yet own knowledge and skills in manage rubbish in a way sustainable. Temporary that, on the aspect activities, problems partners found is resident of RT 04 RW 05 Exodus Mangunsari doesn't have any activities yet can reduce supply rubbish House ladder to Jatibarang TPA, there is no community that can do it yet become cadre care rubbish as mover in management rubbish through trash bank, and not yet There is community that is special manage Garbage also creates management rubbish in this area Not yet integrated, coordinated and managed with Good.

Based on the partner conditions stated above, the lecturer community service program is about formation cadre care rubbish will focus on establishing a waste bank for inhabitant community of RT 04 RW 05. It is hoped that the above activities can support and synergize with government programs in development sustainable For make Indonesia a an independent, individual and sovereign nation. In terms of This is caring public in look after, take care of, and do conservation environment they become one of the pillars within realize nation with personality.

**METHOD**

Referring to the results of mapping the problems faced, needs and discussions determination priority problem partner built, then The method of approach and application of science and technology offered to overcome the priority problems faced can be described.

Table 1. Priority Problems, Science and Technology Solutions, Approaches/Methods, Work Procedures and Partner Participation

M a matter of priorities	Science and technology solutions	Approach/method	Work procedures	Partner participation
Human resource aspects	Increase awareness and knowledge community in RT 04 RW 05 Subdistrict Mangunsari Subdistrict Gunungpati Semarang City about importance management rubbish in a way sustainable	FGD Campaign care rubbish via flayer on social media	Get to know problem rubbish at RT 04 RW 05 Together with identifying partners possible steps taken in handle problem rubbish at RT 04 RW 05	Partner participation from the start on attendance at each meetings and Partners provide training venues and equipment support

M a matter of priorities	Science and technology solutions	Approach/method	Work procedures	Partner participation
			Reflection and evaluation together on results have been obtained.	
	Increase Skills inhabitant in managing waste banks and processing trash, fine organic or inorganic	Drawing up a plan establishment of a Waste Bank in a way participative Do it training waste bank management	Together with partners compile committee establishment of a Waste Bank With partners do training waste bank management	Providing training places, equipment support for joint activities.
	Increase participation society to behave care rubbish can materialized in activity they daily	Do simulation about processing rubbish in a way participative	Together with partners carry out simulations processing participatory waste	Providing training places, equipment support for joint activities.
Aspects of activities	Shaping cadre care garbage in RT 04 RW 05 Subdistrict Mangunsari Subdistrict Gunungpati, Semarang City	Do it recruitment cadre care rubbish Initiate activity aware and caring rubbish through waste bank institution in RT 04 / RW 05	With partners do recruitment waste bank volunteers Together with partners and volunteers, do it activity campaign care waste and waste bank processing	Providing training places, equipment support for joint activities.
	Implementation training management waste bank management and training processing rubbish	Do training management / management of waste banks for partners and volunteers. Do training processing waste, both organic and inorganic for partners and volunteers.	Explain the methods establishing a waste bank Explain about method waste bank management based community Explains about method processing organic and inorganic waste Implementing the Steps management rubbish sustainable and free community	Providing training places, equipment support for joint activities
	Implementation activity comparative study to community that has a waste bank in Semarang City	<i>Sharing Knowledge</i> about management rubbish Seek and know <i>best practices</i> management rubbish in the community other.	Apply knowledge and experience new in management rubbish based community Accompany partner in realize objective establishment of a waste bank in RT 04 RW 05 Subdistrict Mangunsari	Providing training places, equipment support for joint activities with
	caring movement activities rubbish through the waste bank	Make the flayer care rubbish Create a flayer about processing rubbish Introducing institution waste in other communities	Accompany partners and volunteers in make the flayer care waste and processing rubbish Accompany partners and volunteers in do socialization institution to other communities	Providing training places, equipment support for joint activities.

## RESULTS AND DISCUSSION

### Description of Service Location

Ward Mangunsari is one of the sub - district administrative is in the District Gunungpati,

Semarang City. The location is on the outskirts Semarang city and occupies a plain area high, make Ward Mangunsari is sufficient area cool and become one center agriculture and plantations in Semarang City. Development and mobility residents in the city of Semarang make number increase population and settlements in the Village Mangunsari Enough significant. This matter give consequence for many rubbish House every ladder day produced by the Society.

Trash This some are managed Alone with system conventional disposal, some are managed by groups society, institutions specifically, and the Semarang City Cleaning Service. A number of group the community does it too management rubbish through the Waste Bank, either one or the other direct coordinated by the PKK Outer Generation Team Mangunsari and Semarang City PKK, as well as those managed by the residents themselves public. Although so, society in RT 04 / RW 05 Subdistrict Mangunsari Not yet has a Waste Bank institution so that they only depend on institution external and management rubbish with a lift, transport and dump model.

### Stages Implementation Activity

#### Stage Preparation

At stage here, team devotion prepare all related matters implementation activity namely : (1) Coordination with the Service Team, (2) Management Permission Devotion, and (3) Coordination with apparatus Subdistrict and RT 04/RW 05 Kelurahan Management Mangunsari. Coordination with team devotion done with discuss together related with time implementation and materials to be carried out prepared. It's just, because constrained Enforcement Restrictions Community Activities (PPKM) consequences Covid-19 pandemic, then activity stare advance Not yet Can held. For anticipate this, then implementation activity new scheduled after the PPKM period ends.

From coordination between team servants and administrators of RT 04 RW 05 Subdistrict Mangunsari, obtained agreement that activity will held on Saturday, September 30 2021. Date the chosen Because is the right time for second split party, and also see developments in Covid 19 that have occurred slopes in the city of Semarang. Although Thus, the mentoring process still done since June 2021 with limited online and offline models for socialization about management rubbish can given since beginning

#### Stage Implementation

Stage implementation done in two stages namely, stage assistance and procurement waste bank equipment and stages training and formation management. Stage First done between until June with mid September 2021 with using a personal and application approach model *whats app* (WA). In addition, at stage this is also done procurement waste bank equipment like place trash, composter liquid and solid, scales, books savings trash, and books big. Tools This expected can give motivation and stimulation to citizens so they can manage rubbish in a way collective, though constrained by PPKM and the Covid 19 pandemic.



**Figures 1 and 2.** Procession Submission waste bank equipment, books big, and books savings rubbish to Chairman PKK RT 04/RW05 Exit Activator Mangunsari  
Source ; Service Team Documentation, 2021

Stage second is training and formation Samapah bank management. In terms of This 2 waste bank management was formed based on the number of Dasa Wisma in RT 04/RW05 Subdistrict Mangunsari. In the beginning, the target will be made participant training This is group residents of RT 04/RW 05 Subdistrict Mangunsari in a way overall, but because in the group gentlemen many are busy and lacking own time at home, then the target specifically for PKK members. This step selected Because mothers relatively have enough time free time at home and PKK institutions are considered suitable coordinate activity because in line with the program implemented by the Semarang City PKK Mobilization Team. For that, then activity The training held on Saturday, October 30 2021 was

attended by mothers PKK member RT 04/RW 05 Subdistrict Mangusari just. Although Thus, information This still will be delivered to gentlemen, fine in a way direct through wives them, nor online via whatsapp group (WAG).

For PKK members RT 04/RW 05 Kelurahan Mangunsari, mentoring and training process in the waste bank service program This become new thing for them, because during This they Not yet understand the formation process waste bank institution. All this time, they only throw away rubbish without there is a good management process. However, it's rubbish House resulting ladder Lots form plastic, paper, glass, and iron which if collected and sold will give addition income for PKK cash or dasawisma cash.

Implementation training waste bank management done with using 2 (two) methods implementation namely : (1) Socialization method and (2) Planning method Participative. The first method, socialization done with give material about steps creation of waste and material banks about processing rubbish. In the material the. In the material this, delivered steps the formation of a waste bank which includes : 1) forming administrator, 2) determine name of waste bank, 3) choose place / location of waste bank, 4) work The same with collector, 5) provide waste bank equipment, and 6) prepare waste bank administration. For material processing rubbish, delivered How method sort rubbish, way process organic and inorganic waste.

Second method is planning participation carried out by all participants and facilitated by the team servant. This method done For see and reflect readiness PKK members within create a waste bank in their area. At stage this, each participant write readiness, problems and hopes they in form a waste bank. They write on paper small (*sticky notes* ), attached to *the white board* and read in front they. With method here, participants Can each other read, listen and discuss opinion they so that aspirations all participant can sound, and then formulated steps to be taken furthermore.

Apart from training, stage this also covers activity formation management which is step First in establishment of a waste bank. Although so, then formation management in this program become steps taken after procurement waste bank tools and administration Because respond Covid 19 pandemic situation and PPKM regulations. But matter This No become problem from inhabitant because change design this too has been discussed previously.

In terms of management, it is a waste bank This Then shared based on existing dasawisma, namely dasawisma Melati 1 and dasa Wisma Melati 2. The naming of the waste bank is also based on on Name daswisma, namely Melati Waste Bank 1 and Melati Waste Bank 2 with considerations to make it easy remembered and done attached to the heart and memory inhabitant. After management formed, step next thing to do is Internal coordination continues and starts intertwine communication with collectors (*rosok* ), so that the rubbish that has been collected can distributed and sold to collector.



**Figures 3 and 4.** Planning Participation is carried out in training management of the Waste Bank and Management of the Melati 2 Waste Bank RT 04 RW 05 Subdistrict Mangunari

Source : Service Team, 2021.

### Stage Evaluation

Implementation activity devotion formation cadre care rubbish through waste bank institution carried out in RT 04 RW 05 Kelurahan Mangunsari held in a way comprehensive and integrated. Started from coordination initial, socialization, procurement tools and assistance, training formation management, up to evaluation. In terms of this, evaluate become the last stage But No lost importance in frame measure achievement of service targets, both in aspects knowledge, attitudes and skills.

Evaluation process done in 2 (two) ways, namely request *feedback* from participant training and reviewing direct sustainability of existing Waste Banks in each dasawisma. Giving *feedback* from PKK member RT 04/RW 05 Subdistrict Mangunsari be delivered direct moment training takes place,

namely in session final training. In terms of This is a member of PKK 04/RW 05 Subdistrict Mangunsari give input form exists accompaniment intensive from team devotion to them, because they consider Not yet Can maximum Work Because Still new. Input This Then followed up by the team UNNES servant and stated readiness in accompaniment, so that this program can sustainable.

The second evaluation method is review direct location of waste banks in each dasawisma For see *progress in* waste bank management that has been made they do. From the review direct This obtained information that the Melati 1 waste bank is clean but looks abandoned. This matter Because Not yet formation management or not someone is responsible on matter However, on the other hand, the Melati 2 waste bank is visible more neat and well-groomed, though its management new formed after waste bank tool That there is, From reality this, then team devotion own work extra to get it spur return enthusiasm and participation active from mothers at Dasawisma Melati 1 for do management rubbish in a way collective.

### **Success Devotion**

#### **Indicator Success Activity**

Success implementation activity devotion This can seen on some indicators, namely :

#### **Participation active from Participant**

Participation active from participant is indicator main in program success, cause without that's a service program to public No will taking place with smoothly and continuously. In the waste bank establishment program This is participation active from participant visible in participation they since from program planning, up to implementation and evaluation. In program planning, women from PKK RT 04/RW 05 Subdistrict Mangunsari involved in activity map need inhabitant will there is a waste bank. In program implementation, participation PKK mothers were also seen in attendance enthusiasm they in accept material training. Even those present No too Lots Because amount participant of course Still limited consequence this covid 19 pandemic, however participation PKK residents (mothers) who do not present looks at the enthusiasm they in listening material on *Whatsapp* Group.

#### **Increasing Citizens' Understanding and Awareness of Waste Management through Waste Banks**

The training material in the form of steps to establish a waste bank and how to process organic and anorganic waste is basically material that is familiar to members of the public. With diverse work backgrounds, they often get this material at the agencies where they work. It's just that this material usually just passes by without any meaningful action from them. This service activity tries to explore residents' understanding of waste management as well as raise their awareness to take concrete action by establishing a waste bank.

From the various methods used, the information about the establishment of a waste bank provided to community members flows naturally and does not seem patronizing. They can explain material about waste, waste management and steps to establish a waste bank that they know about in the forum in a relaxed atmosphere. Meanwhile, the Unnes service team acted as facilitators who took an inventory of residents' opinions and ideas and drew conclusions and emphasis on discussion materials. With a method like this, it is able to provide comprehensive understanding for citizens without being coercive. Apart from that, several game methods used by residents can raise people's awareness to play an active role in managing the waste bank in their community.

#### **Citizens' readiness to establish a waste bank**

Waste is a crucial problem that is sometimes considered trivial by community members, so they are often neglected and indifferent in managing waste. Household production waste is usually only collected in rubbish bins without prior sorting and processing. Even though there are several residents who have sorted their waste by distinguishing between organic and inorganic containers, they place it in the same trash bin. The pile of rubbish will then be collected by private waste officers who work together with residents 2 (two) times a week, by mixing organic and inorganic waste.

With this dedication, their views are slightly opened and the awareness arises that waste is actually a big problem that must be addressed. Responsibility for waste management cannot only be given to one person, or an external institution, but every member of society has the responsibility to manage it. By sorting and managing optimally, waste that was initially a problem can be created as a

business opportunity that can increase family income as long as it is managed well. From here, awareness emerged from residents about community participation in establishing a waste bank. Apart from that, they also believe that the strong social solidarity they have can be the basis for community-based waste management efforts in their area.

### **Obstacle factor**

Although implementation activity This can said succeed with existing indicators explained above, but implementation activity this also has obstacles, namely :

### **PPKM period due Covid 19 pandemic**

Covid-19 pandemic that hit throughout the world including Indonesia causes implementation of adequate health protocols tight to keep the virus No easy spread. One of the Health protocols that has an impact on implementation activity devotion This is something rare and prohibited public For gather and congregate. Especially in the middle in 2021, during the service period This will Starting, the city of Semarang is included in the red zone because happen surge Covid-19 disease requires The Semarang City Government issued PPKM rules. This matter make design devotion experience change. A number of stages activity No Again in accordance with order at first, but operate customized stages with the PPKM implementation period. Additionally, several activity, like socialization is also carried out with offline help (in matter this is WAG), in convey material devotion.

### **Busyness inhabitant**

Residents in RT 04/RW 05 Exit Mangunsari majority is resident productive, where the average Head Family 25 years old until with 50 Years. This matter means they still very productive in Work in accordance with eye livelihood they. Not only That's it, wives they also mostly work in the public sector so busyness mothers in RT 04 /RW 05 Exit Mangunsari is also very tall. Condition This cause inhabitant public not enough own time free in activities social in society. For that, then There is activity Devotion also adapts to time free time you have inhabitant.

### **CONCLUSION**

Based on description from results discussion can concluded that formation cadre care rubbish can done with establishing a waste bank. Third stages dedication performed can introduce to partner about importance establishing a waste bank as one of the form responsibility public to preservation environment. With the waste bank, the community can do practice direct sorting, processing and distribution rubbish, so in a way No direct can increase awareness, knowledge, and skills public in management rubbish. The success of this program be measured through 3 (indicators) which are analyzed in a way qualitative, that is participation active participants, increase knowledge and skills for community and readiness public in establishing a waste bank. Although Thus, success actually lies in the sustainability of the waste bank program promoted by the community in a way independent.

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