

Social Engineering for Waste Management in Hangar Systems and Recycling Centers Based on Community Participation Using the Jeknyong Application Supports Banyumas Zero Waste

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Abstract

The aim of the research is to examine community participation in waste management based on the Jeknyong application program and examine the obstacles to the Jeknyong application program. The research method uses descriptive qualitative, taking informants using purposive sampling, in-depth interview data collection, observation with interactive analysis. The results show that community participation in waste management at waste sources is progressing. The community in collecting and sorting inorganic waste has collaborated with waste banks, PDUs, hangars, KSMs with the jeknyong application. The government has also established 25 TPSTs which are able to significantly reduce downstream waste, namely going to landfill, from 144 trucks to 22 waste trucks every day after being sorted and processed. However, there are still obstacles, namely the mixture of plastic waste with organic waste and wet plastic waste making it difficult to process. Picking up inorganic waste using the Jeknyong application system is not yet optimal, because there are still many people who are clueless and don't know where the Jeknyong vehicles hang out. The problem is that waste collectors' welfare does not pay enough attention to the welfare of waste management, namely that partners also move officers and jeknyong carts to pick up waste. Waste management in the center is characterized by KSM with a hangar and PDU system. However, this causes community participation in waste management to be less active.

Keywords: Waste Management, Jeknyong, Zero Waste.

INTRODUCTION

Presidential Regulation Number 97 of 2017 concerning National Policy and Strategy (Jakstranas) in the management of household waste and similar types of household waste, has been followed up by the Banyumas Regency Government with the issuance of Banyumas Regent Regulation No. 45 Year 2018 about Policy Strategy Area (Jakstrada) . Regency Regulation number 45 stipulates target waste reduction by 30% and waste handling by up to 70% per year 2025. Efforts to fulfill the target are directed at reducing waste through 3R (now 5R) activities , and handle waste properly. Banyumas Regency Government in 2018 has built TPS3R which is called the *hangar system waste management* . Management rubbish system *hangar* and Recycling Center (PDU) is innovation management rubbish from The Banyumas Regency Government, which is the first in Indonesia , prioritizes the local wisdom of the Banyumas people .

The Banyumas Regency Government implements this Perbup, starting with *establishing hangars* on land with a minimum area of 1,200 m² through the APBD in five locations, namely: Villages Tipar South Subdistrict Ajibarang, Village Karangcegak Subdistrict Discordant, Village Banteran, Wangon District, Kedungrandu Village, Patikraja District and Village Kradenan, Sumpiuh District. *Hangar* system waste management is considered good by central government so that the Banyumas Government gets attention by providing assistance with waste management equipment and assistance in establishing a PDU which is a replication of the *hangar* s e small scale for the urban area of Purwokerto .

Government Banyumas Regency need alert, learn And study various weaknesses and advantages experience dynamics of waste management for the sake of continuity management rubbish system *hangar* and PDU Which

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has been founded and is a local wisdom program for the Banyumas community with the *jeknyong application* supporting *zero waste* until now it has not been maximized.

Waste Management Problems in Purwokerto City

The waste problem in Purwokerto City today is quite *crucial* and very urgent to be addressed immediately, several social problems arise, including (a) social conflict between residents because not all the waste collected at each TPS is transported by officers, (b) it often occurs "commotion" between the waste collection officers and the residents, because the officers do not pick up the waste every day, sometimes once every three days, even though the waste levy fees continue to rise, (c) the officers often ask for additional fees, (d) the awareness of residents in disposing of waste is still low, it is proven that there are still many residents who throw rubbish carelessly, (e) frequent flooding in housing areas, on main roads, due to the large number of gutters clogged with rubbish. The development is that the volume of waste in the city of Purwokerto is increasing, even though the waste capacity is at the BLE TPA (Education Environment Based Waste Final Processing Site) in Wlahar it is not optimal. The program to increase community participation in upstream areas as a source of waste production has been carried out using the application, both Salinmas (Banyumas online waste) and also the *Jeknyong application*, but it is still in progress and has not shown significant results.

For this reason, it is necessary to increase community participation in waste management at waste producing sources so that waste enters the PDU, TPA BLE in accordance with the Banyumas Regency Regulation. In an effort to increase the participation of waste producing communities in waste sources, the *jeknyong application* program was launched as a pick-up effort in handling waste. However, in reality there are still many obstacles to this *Jeknyong application program*.

Based on these problems, this research aims (a) to examine community participation in implementing the *jeknyong application* program to support *zero waste*, and (b) to examine the obstacles that occur in the *jeknyong application* program in managing waste at waste sources/upstream based on local wisdom.

Research Methods

Research uses descriptive qualitative method, combined with content analysis and secondary data analysis from various hangars, PDUs, KSMs and the Banyumas Regency Environmental Service (DLH). To examine the waste management of hangar and PDU systems as well as the *Jeknyong application*, informants were taken using techniques *purposive sampling*. The data analysis used is the interactive analysis of the Miles and Hubberman model. The procedures include the following: (a) data collection; (b) data reduction; (c) data presentation; (d) drawing conclusions. Data validation uses source triangulation (Maleong, 2016).

RESULTS AND DISCUSSION

Hangar system waste management program and PDU as well as the *jeknyong application* program, continue to be disseminated to the public without stopping. *Hangar* system waste management, PDU, Salinmas and *Jeknyong application* is innovation in waste management efforts in Regency Banyumas is based on community participation with local wisdom. *Hangar* system waste management, PDU is a way of managing waste chosen during period transition management rubbish. Transition from management rubbish paradigm long become management rubbish paradigm new. Management rubbish old paradigm that is, waste management is only your responsibility Government Banyumas Regency completely. The new paradigm for waste management is management Waste is no longer just the government's business but is the whole business public waste generator.

The new paradigm for waste management in Banyumas Regency will be waste must be managed at the source of waste generation or waste generator. Trash must not leave the Rukun area Neighbor (RT) or if you are forced to leave the RT then you cannot leave the area Residents' Association (RW). If rubbish is forced to leave the RW, it cannot leave from the village or sub-district. If you are forced to leave the village or sub-district area, so rubbish No can go out from region Subdistrict. Limit outermost circulation rubbish is a sub-district area. It is very important that waste producing areas must be responsible for waste management in its territory (Report Periodic Rubbish Daily Regency Banyumas Year 2018).

Management rubbish paradigm a new achieved with make commitment , which was made, among others, by the Regent of Banyumas, and all officials and leaders institutions, political parties, Regional People's Representative Council, all sub-district heads, village heads and sub-district heads, all institutions both government and private, both formal and non-formal. The existing commitment is to make a joint promise to take action waste management. Once the commitment is realized, it continues with participation all party and all element society as a waste producer .

Strategy management Technically rubbish , it should be done by producer trash , this thing can seen in in the *hangar* program (PDU) is managed by KSM (community self-help group). *Hangar* have employee Which on duty Fordo management rubbish start from sorting , p collection, p transportation, p processing And p processing end . Producer rubbish Which No capable manage until the waste is finished, you can collaborate with one of the *hangars* closest to the waste source. So managing waste in the *hangar system* is an effort Government Regency Banyumas

The *hangar* system waste management began operating in early 2019 is system management rubbish *top down* , from holder interest to community which will later be handed over completely to the community through KSM. The *hangar* system waste management program is a new program, as most are The program is *bottom-up* , namely the government pays attention and provides facilities to KSM who carry out waste management. Attention and help received by the Banyumas Regency Government from the Ministry of Environment and Forestry (KLHK) and from the Ministry of Public Works and Public Housing (PUPR) regarding the sustainability of the program management rubbish system *hangar* (including PDU) .

Waste management so that it is as expected, namely supporting *zero waste* , is required according to planned activity procedures starting from downstream or waste producing sources or households, continuing in the middle, namely at the TPST or in the PDU or in the *hangar* managed by each KSM. Next comes downstream waste management, namely at the landfill using various modern tools.

The Banyumas Regency Government, at the discretion of Regent Akhmad Husen, is very committed and deserves appreciation in managing waste both upstream, midstream and downstream. Upstream waste management with waste bank management, management with the Salinmas (Banyumas online waste) and *Jeknyong applications* . Furthermore, waste management in the center is carried out in PDUs and *hangars* managed by KSM and the amount is increasing. Downstream management, namely at the TPA and in Banyumas there is a BLE TPA (Environment and Education Based Final Processing Site).

Banyumas Regency implements waste management guided by Presidential Regulations No. 35 year 2018 about Acceleration Development Installation Processing Rubbish Becoming Electric Energy Based on Environmentally Friendly Technology (BLE) . Other regulations are Banyumas Regency Regional Regulation No. 9 of 2020 concerning Waste Management in Banyumas Regency, Regent Regulation No. 45 of 2018 concerning the legal umbrella for waste management strategies in Banyumas Regency and was included in the Banyumas Regency Regional Regulation.

Waste management in Banyumas Regency is differentiated into (a) upstream waste management or waste producing sources; (b) waste management in the middle, namely in *hangars* for rural areas and PDU for urban areas, both managed by KSM; and (c) downstream waste management, namely at the BLE TPA. On year 2022, Regency Banyumas enter in 45 Top big innovation Competition System Innovation Service Public (Synovik) from 99 participant from all over Indonesia. Innovation Oath Bear that is Magic rubbish become Money, through service application on line Salinmas (Rubbish On line Banyumas) And *Jeknyong* (*ojeke enyong*). Waste processing in Purwokerto City is called a Recycling Center (PDU) while in areas outside urban areas in the Banyumas Regency area it is called a *hangar system* .

Based on source data from DLH Regency. Banyumas (2022), region urban Purwokerto own sixteen PDU processor rubbish And four polling stations (Place Processing Meanwhile) this number continues to increase . Sixteenth PDU be equipped means And infrastructure, like building (mini hangars for urban areas measuring around 200 m², waste transportation equipment, waste sorting machines (Type ATT or Gibrik), and RDF plastic shredding machine (Type PP 500 ATT). PDU's equipped with RDF chopping machines totaling 3 (three) PDUs

and each PDU has amount machine enumerator plastic RDF vary customized with wide capacity owned building.

Data on the completeness of KSM facilities and infrastructure in each PDU is displayed in Table 1 (quoted from Sri Sutarsiyah, 2023) as follows.

Table 1. Small *Hangar System (Recycling Center)* and KSM in Banyumas Regency.

NO.	RECYCLING CENTER (PDU)	REGION	NAME OF PDU MANAGEMENT KSM
1	PDU Purwanegara	Purwokerto North	Prosperous
2	PDU Pabuwaran	Purwokerto North	Migunani
3	PDU Karangwangkal	Purwokerto North	Sregep Treat it
4	PDU Bored	Purwokerto North	Kamandaka
5	PDU Grendeng	Purwokerto North	Green Saber
6	PDU Sum up	Purwokerto North	Source
7	PDU Sokanegara	Purwokerto East	Soka Swear
8	PDU Purwokerto Wetan	Purwokerto East	SAE
9	TPS Arcawinangun	Purwokerto East	Statue Knight
10	TPS Kranji	Purwokerto East	Clean Independent
11	TPS Mersi	Purwokerto East	Duke Mersi
12	PDU Karangpucung	Purwokerto South	Mugi Rehearsal
13	PDU Cape	Purwokerto South	Brayan
14	PDU Berkoh	Purwokerto South	Blessing
15	PDU Bay	Purwokerto South	Mulya True
16	PDU Karangklesem	Purwokerto South	Broom Rehearsal
16	PDU Kober	Purwokerto West	Uproar
17	PDU Kedungwuluh	Purwokerto West	Wulan Sari
18	PDU Pasirkidul	Purwokerto West	Cheerful
19	TPS Karanglewaslor	Purwokerto West	Rahayu
20	TPS Rejasari	Purwokerto West	Barakah

Source : Data primary (DLH, 2022) processed from Sri Sutarsyah (2023)

Based on the table above, each sub-district in the Purwokerto urban area already has a Recycling Center (PDU) and is managed by the respective KSM in that area. Therefore, it is hoped that the waste in each area can be processed by KSM with their respective PDUs, so that the processed waste or residue sent to the BLE TPA will actually be reduced to a small amount of waste that has been previously processed.

Some time ago, the newspaper Kahar SM (2023) reported that the impact of the construction of a new waste recycling center (PDU) in Sumampir had caused the existing waste to "spill over" to the side of the road. The Banyumas Regency Environmental Service (DLH), asked KSM managers to collaborate with other KSMs

during the PDU construction process in Sumampir. Head of Banyumas Regency DLH Waste Management Division, Syaihun, stated to SM the following:

"... we have already discussed this in the sub-district and KSM, coincidentally the chairman of the old KSM was unable to do so because he was already old. Then there is a new management, in Sumampir it is difficult to find personnel to manage waste. Then the location that can process waste is under construction, so there is no place. Furthermore, the PDU construction is targeted for completion in November 2023. With a work contract for 4 months. From us, DLH, according to Syaihun, suggests collaborating with other KSMs, which still have the capacity to manage waste every day, such as KSM Karancegak, Kedungrandu. "I have instructed you to approach the KSM," said Syaihun as Head of Solid Waste Division of DLH Banyumas recently..."

This is the incident of "overflowing" of rubbish in the Sumampir area when the PDU construction was being carried out and the KSM management was changed in the area. That is the need for collaboration between KSM in the nearest PDU area so that waste problems do not occur, due to the temporary construction of the PDU. This is in line with the research results of Suyanto (2022), which states that there is a need for collaboration between stakeholders and reducing sectoral egos between stakeholders so that waste management at waste producing sources is significantly successful.

The next statement from the Head of Solid Waste (Syaihun) DLH Banyumas Regency, explained the connection with the construction of the PDU to SM as follows:

"...The construction of the Sumampir PDU costs Rp. 600,000,000.00, and will eventually be larger than the old or previous building. Before the work is carried out, we have discussed with KSM and service providers, to do half of the work first. This is done first on the East side, then when it is finished on the East side, it can be used. However, in my opinion, the PDU construction work is a bit slow, in terms of time there is still very little... Furthermore, regarding the accumulation of rubbish, he asked the public to be patient for the time being. DLH is looking for other options, one of which is transporting the waste directly to the BLE TPA in Wlahar... Furthermore, he stated that the waste is piling up because it is not being processed because the processing PDU is being built... Yes, our option is to go to the BLE TPA, I have coordinated with UPKP to help with transporting the rubbish..."

Based on the description from the Head of the DLH Waste Division, the conclusion was drawn that the transition of KSM management and the need for PDUs caused "an overflow of waste in the Sumampir area, this was supported by the difficulty of finding KSM personnel. As the results of an interview with one of the trash cart pullers in a different area, let's call him WT, aged 48 years, stated the following:

"... you see, sir, I have been collecting rubbish at this housing complex for about 15 years, my operational hours start from 6.00 am to around 13.00 and I work from Monday to Saturday every day, and I have a day off on Sunday. I am paid IDR 800,000.00 from the RW every month plus IDR 100,000.00 from Bazizs every month. Some time ago in Berkoh a small "PDU" was established, because it did not meet the proper PDU requirements, and this "PDU" was managed by KSM. At that time I was offered by KSM to become a contract worker at the PDU with a monthly salary of Rp. 1,500,000.00, working hours from 8.00 to 16.00, interspersed with breaks. But I don't want to, because my calculations are better off working as a garbage cart in this housing complex, even though the income I receive is $800,000 + 100,000 = 900,000$. This is because firstly, after work pulling the cart I can do other work such as watering plants in people's houses, doing odd jobs by ordering residents to do it, secondly, I often get the type of residents who ask me to throw away more rubbish than usual, thirdly every Friday there are a lot of residents, yes, some of them often give money as a Friday blessing, then fourthly, by collecting rubbish, I often get paper, plastic bottles and other things that I can "scavenge" and sort to sell to scrap dealers, coincidentally around the housing complex where I work at a junkyard. Apart from that, during Eid, I get THR from the RW, from each RT in the area where I work, and mothers often give me THR in the form of envelopes and bread cakes, if it's Eid. Indeed, there are 6 people who work as garbage collectors in this housing complex, and we really enjoy this job... the important thing is that this job is legal for me. and couldn't work anywhere else, because my time was spent at PDU, that was my consideration, why didn't I want to work at PDU managed by KSM at that time..."

Based on the presentation of the results of an interview with one of the waste collection officers, it was stated that it is true that their economic factors are *smart in their calculations*, even though their salary as a garbage cart puller is small compared to the salary in PDU from KSM, but they are also smart in calculating their working hours. and use of free time to become opportunities to work for additional income.

The waste management program carried out by the Regent of Banyumas towards *zero waste* supports *a green city*, with downstream waste management programs, namely the Salinmas and *Jekenyong applications*.

This means there is a need to empower the community so that participation runs optimally. In accordance with Parkin's theory (1995) which states that every empowerment carried out by the government must be seen as a trigger to mobilize economic, social and environmental activities with various potentials that exist in society in order to achieve independence.

One of the policies and strategies for managing household waste in urban areas Purwokerto is taking a service and technological approach using mobile phones (cellphones) through the Salinmas and *Jekenyong applications*. The complete approach to picking up rubbish is through service bank rubbish, application salinmas And *jekenyong*, And TPS3R/TPST3R. Allservice this was made to facilitate public in processing waste at the waste source (upstream).

Government Regency Banyumas change draft processing rubbish from “ collect-transport-discard ” become “ subtraction And handling ”, optimizing maximizing waste utilization and minimizing waste disposal to landfill. Environment and Education Based Final Processing Site (TPA BLE) as a place handling final rubbish, in operationalize it on month July 2022 with objective improve waste management in Banyumas Regency, including urban areas Purwokerto (Laksono, 2022). The concept of handling BLE landfill waste is handling rubbish Which Already No can utilized in PDU, use technology tool waste destruction/burning (pyrolysis). This concept is expected to reduce the burden pollution in the environment and accelerated development in waste management in Regency Banyumas.

Waste management for urban areas in PDU is managed by KSM, in practice it is good and effective in terms of environmental aspects, but in this case it is suspected that the community does not feel responsible and does not participate enough in this waste management. The community does not seem to feel responsible for waste management, when they have paid waste fees to the KSM (via RT), they assume that it is the KSM's job to take care of the waste problem. Even though the waste problem is our collective responsibility to handle it, it is not borne by just one stakeholder. As told by an informant, a housewife in Berkoh, where her house is near PDU and KSM "Berkah", let's call her PAR, aged 60 years, position as a housewife, stated to the researcher as follows:

“... I actively pay Rp. 17,500.00 for rubbish to Dawis RT every month. Garbage collection is carried out every day by RW waste officers, collected in the morning. It's just that every time I collect rubbish in the rubbish bin, I never separate organic waste from the dapus and inorganic rubbish, just mix it in the rubbish bin. The problem is that the rubbish officers take the rubbish and mix it into carts. It's just that usually if there are glasses, bottles, paper that are dry, they are usually taken and collected by waste collectors, sometimes there are often "fights over" between scavengers and waste officers at dawn and even at dawn. As a housewife, I have never done any sorting... let the officers at the TPS or at the PDU sort and process the waste... after all, I have already paid my dues every month...”

This is the statement of one informant about his experience in throwing away rubbish at one of the PDUs in the KSM "Berkah" area. This shows a lack of responsibility in waste management, as if the responsibility for waste management is the responsibility of the KSM management at the PDU. In fact, according to the provisions, waste management is the responsibility of all stakeholders and is not just borne by one stakeholder.

A different statement was conveyed by one of the informants, namely AB, 58 years old, the administrator of the PDU or KSM "Soka Bersimpah" stated the following:

"... regarding waste recycling, especially the recycling of KSM Soka Bersimpah, here we already have a kind of education with the community, so that waste from households also has something sorted, called organic waste,

called the salinmas program, we prepare it from the community. barrels, we have provided knowledge that food waste, vegetables and so on are put in plastic, tied, put in barrels. Two days a day we take it by KSM to be processed at the recycling center where the result will be a waste slurry which can be used for cultivating maggots and then can also be made into compost. Why has it started to be segregated from the source because the initial program of waste management is a system 3R, *reduce, reuse, recycle*. So it is not only the responsibility of the PDU or the government but a shared responsibility as the regional regulation states that waste must be processed from the source, it must be sorted so that it reduces the flow of previously mixed waste, so that inorganic and other waste enters the PDU here which will later be processed via *conveyor sorting*, enters the gribrig machine, the results will come out with 4 items, the machine can sort itself, so the organic one is at the front then the slurry waste is at the front, then the one that comes out from the back is RDF plastic then *the middle*, the other one is sorted Separately, it's called residue that can no longer enter the engine, it has to be finished with a burning device that complies with the SOP and has been officially stated in the IPAL, if you can't burn waste here, that's it. So that is the responsibility of the BRE TPA in Kaliori there, so we take the waste from the community with the KSM officers to be processed at the recycling center ...".

Jeknyong Application programs and waste processing at KSM are quite good and significant in waste management, namely for organic waste and inorganic waste. That is the importance of having a PDU managed by KSM which is waste management in the center.

Furthermore, regarding data on the amount of waste entering the Recycling Center in 2022 which was processed by Sri Sutarsiyah as follows.

Table 2 Data Amount Rubbish enter Center Recycling (Year 2022)

Region Subdistrict	Name KSM	Name PDU	Amount Rubbish Enter PDU (tons/year)
PURWOKERTO NORTH	KSM "MIGUNANI"	PDU Pabuwaran	1,750.87
	KSM "GREENSABER"	PDU Grendeng	1,630.90
	KSM "SREGEPTAKE CARE"	PDU Karangwangkal	1,239.92
	KSM "SOURCE"	PDU Sum up	2,368.79
	KSM "PROSPEROUS"	PDU Purwanegara	2,039.76
	KSM "KAMANDAKA"	PDU Bored	2,228.92
		Amount	11,259.15
PURWOKERTO EAST	KSM "STATUE KNIGHT"	PDU Arcawinangun	1,764.13
	KSM "SAE"	PDU PurwokertoWetan	1,812.43
	KSM "CLEANINDEPENDENT"	TPS Kranji	1,923.61
	KSM "ADIPATIMERSI"	TPS Mersi	373.12
	KSM "SOKA SWALLOW"	PDU Sokanegara	2,445.98
		Amount	8,319.28
PURWOKERTO SOUTH	KSM "MULYATRUE"	PDU Bay	1,585.55
	KSM "BLESSING"	PDU Berkoh	1,461.59
	KSM "MUGI RESIK"	PDU Karangpucung	2,737.75
	KSM "BRAYAN"	PDU Cape	2,152.09
		Amount	7,936.98

PURWOKERTO WEST	KSM "MURATION"	Karangewas TPSLor	1,065.50
	KSM "CHEERFUL"	PDU Sand South	1,527.71
	KSM "BAROKAH"	TPS Rejasari	1,210.71
	KSM "WULAN SARI"	PDU Kedungwuluh	1,257.46
	KSM "UPROAR"	PDU Kober	1,955.07
		Amount	7,016.46
	AMOUNT TOTAL		34,531.87

Source : Data Sri Sutarsiyah, 2023

Community behavior in managing waste sent to PDUs managed by KSM, in general the community has not sorted waste from their households. Public perception still assumes that waste management is an obligation of KSM in PDU, because people have already paid fees, so people do not need to sort it at home. This is also reinforced by the officers who take the waste to their respective homes, generally not separating organic and inorganic waste. It's mixed again in the cart, so there's no point in sorting it at home, because when the officer pulls it in the cart it's mixed again.

As stated by the PDU administrator, an informant, namely Mr. Jhn, aged 48 years, stated the follow".... The waste that enters the PDU here is still mixed, so you have to separate it yourself so that it is sorted manually to sort out waste that is residual or cannot be ground, for example, bro, there are cloths, shoes, bags. "Trash that comes from the community after being separated is put into a *conveyor* (sorting) machine, so that later there will be employees who sort the waste that has economic results from selling it, paper or bottles are also separated and will go into the shredding machine ..."

That is the statement from the KSM management at PDU, from this statement, the community has made no effort to participate in waste management or sorting organic and inorganic waste before entering the PDU. Furthermore, the following statement is presented from one of the other KSM administrators, AB, aged 54 years.

".... Because there has been no effort from the community to sort the waste, it is still mixed up, so we need to pay more attention. PDU has asked for it and there is also a program from the sub-district explained through the RT head to make it easier for workers but until now it hasn't been implemented, bro, it's still mixed up . Next he stated. The type of waste that comes in is still a mixture of both organic and inorganic, even as mentioned earlier there is also bags, cloth, so it has to be separated manually and then put into a chopping machine so it can be chopped, if it's not like that, over time our machine will be damaged too. right ...".

Based on the statement above, it can be seen that community participation in waste management at PDU is still low. This is due to a lack of perception and understanding of the importance of waste management for environmental preservation and health. This is in line with the understanding of ecocentrism (deep ecology) regarding the environmental movement. The principle is to accept the environment and influence the social values of society's vice verce (Buttel, 1987, Harper, 2004).

The following was conveyed by an informant, regarding the obstacles that exist in PDU, let's say AI, age 53, the following KSM administrator.

".... For waste collection officers there should be more people because there is a shortage, especially for male workers so that the process is faster. Welfare and health are also important, bro, even though everyone is on BPJS, bro ..."

Based on the informant's statement, it appears that at the PDU there are obstacles in processing waste, including the lack of officers willing to work at the PDU, due to, among other things, the lack of welfare and health aspects.

Participation Public In Management Rubbish PDU Based Program *Jeknyong*

Waste management upstream or at waste sources, such as hangar systems, PDUs based on the Salinmas and *Jeknyong applications*, is very appropriate in order to increase community participation as waste source producers. This is very possible, if the community is able and has a growing awareness of participating in waste management, it is hoped that the waste that goes to the landfill is truly residual waste that has no economic value. So that the capacity of the landfill will increase and the lifespan of the landfill will be longer. As is known, the existence of TPA in every region is a problem for the Government, Partners and for the community. This is because the existence of a landfill makes the community affected by negative impacts, such as offensive odors, decreasing land prices, groundwater evolution, social conflict, increasing dust and so on.

For this reason, it is necessary to encourage independent waste management by the community based on their own awareness so that community participation will increase. In particular, waste management in Banyumas Regency has been good and deserves appreciation. The Regent of Banyumas at that time, Akhmad Husen, was very committed to waste management, even implementing a *zero waste program*. Various upstream waste management efforts such as the Salinmas application system, *Jeknyong*, waste bank, PDU system, hangar with KSM as the manager are very good and deserve a thumbs up.

The Regional Government of Banyumas Regency is also very good at managing downstream waste with the BLE TPA system, so that the BLE TPA system by the Minister of Environment and Forestry, namely Siti Nurbaya, will replicate the downstream waste management model with BLE TPA for all Districts or Cities throughout Indonesia. will implement a BLE landfill like the one in Banyumas Regency. As is known, the waste management system downstream and upstream, which has been and is being implemented in Banyumas Regency, is the best waste management system in Southeast Asia.

The Governor of Central Java, Ganjar Pranowo, in waste management, stated the need to emphasize waste management in the Upstream - Downstream areas. He in the daily newspaper, SM, when commemorating World Environment Day 2023, Central Java Province at the Slawi Ayu People's Park (RASA) Tegal Regency, 14 July 2023, stated that:

“...waste management requires consistency from upstream to downstream. Continuous education continues to be carried out so that waste management can provide added value. Several examples of waste management in the regions can be replicated so that a large movement to resolve the waste problem can be carried out. Including the development of a circular economy. Furthermore, he stated that management was starting to be as good as in Banyumas Regency. Like the *Jeknyong* management system, even waste management at PDU is modeled on organic waste being handled at home and not allowed to leave the yard. The people at PDU are taught by using a computer that the waste that can come out is only inorganic, and even then it is sorted and can be sold, so this has added value...”.

Thus, various waste management innovations upstream, namely at the source of the waste, can be carried out using various innovations according to local wisdom in each region.

The implementation of upstream waste management as a source of waste production can also be stated in Banyumas Regency, the research area, namely that the community's enthusiasm for waste management does not recognize holidays. Waste management at the Sumpiuh TPST, Banyumas Regency, even though it is a holiday, the TPST is still struggling to operate the pyrolysis machine to destroy waste residue. A KSM chairman at Sumpiuh TPST, Sutarno told SM, namely:

".... the pyrolysis machine is still working on holidays, one of which is to condition the waste on the Sumpiuh protocol road. Every day at five in the morning, the rubbish on the protocol road is picked up by officers, there are no holidays in the hangar. TPST strives to provide the best possible service, so that there are no more complaints about rubbish on protocol roads as the face of the region. In the midst of limited transport fleets and personnel at the Sumpiuh TPST or hangar, services are still maintained without holidays. Furthermore, Sutarno stated that waste collection on protocol roads will be earlier before working hours start. This ensures that existing customer waste collection schedules and routes do not change. Thus, protocol roads are prioritized in time. On Sunday holidays, the pyrolysis machine works one shift. Thus, there is customer waste collection

on the protocol road on Sunday mornings. Positive impact on the work effectiveness of waste sorting employees. On Monday morning, they can go straight to work because there is already trash...".

Based on the statement from the hangar chairman, it appears that the commitment of KSM and officers is very good, and this was done out of their own awareness in the context of waste management so that they can support *zero waste* by increasing community participation. Waste management in the upstream and middle areas of Banyumas Regency, in urban areas such as *Jeknyong*, is implemented well, but technically it needs to be improved. Apart from that, not all urban areas receive socialization on the waste management system of *the Jeknyong pick-up ball* application system, which is different from the waste bank waste management model.

An informant, let's call him HS, aged 61 years, a PKK RT administrator whose house is near the PDU, stated the following about the *jeknyong program*:

"If you already know about the *Jeknyong program*, in our opinion it is also a good program... utilizing goods that have economic value. The Jeknyong program already sorts waste so it can reduce the sorting of waste that we process too. Not only can it be exchanged for money... but later it can be exchanged for other things, such as food, souvenirs, basic necessities...".

Furthermore, regarding waste management with the *Jeknyong application*, an informant from the management of Dasa Wisma, SC, aged 54 years said the following:

"... For waste collection via the *jeknyong application* There aren't any here in the area where I live, but it looks like it's the same, it's definitely a good goal. "Here, we only focus on organic and inorganic waste, the results of which are also for shared prosperity, because here we also have a tourism program for workers and their families ..."

In line with the statement above, an informant, a PKK administrator at RT level, let's call him MK, aged 48, stated the following regarding the *Jeknyong application*,

"... I've heard that, the management of the Jeknyong application system has also been directed at it, but until now nothing is working. In fact, if it works well, it makes things easier and benefits the community, for example, we don't have to go far to throw away the trash, we just have to pick it up. It's rubbish, he said, it can also be exchanged for food or tour packages, bro ...".

Furthermore, AP informant, aged 56 years, Dasa Wisma administrator, when asked about the Jeknyong program, stated the following:

"... Jeknyong, if I know, bro, the flow is like that, it's also good for helping us residents, especially since it can be exchanged for food, souvenirs that are good enough for household needs. Yes, just participate, for example, if I have a lot of rubbish, I collect it and use it, so it's not a hassle having to go there .. " So "*Jeknyong is an application for the Banyumas government program for transporting rubbish, sir, so in the application there is information related to transporting rubbish, for example if people want to stay at home, it's like transporting it, sir, it's like an online motorbike taxi but this is picking up rubbish ...* ".

Some of the statements made by the informants above, regarding waste management in Banyumas urban areas with sorting programs, picking up balls, with the Jeknyong application, were actually enthusiastic and welcomed positively. However, due to the lack of socialization and uneven implementation or implications of this program, they regret that this program did not reach their area. That is the need for socialization and even implementation of the *Jeknyong program*, so that *community participation continues to increase in waste management with the Jeknyong application system*. It is homework for agencies related to waste management.

CONCLUSION

Community participation in the waste management of the *hangar system*, PDU, TPST based on the *Jeknyong application*, has been running but is not optimal even though it can provide economic value for the community. Factors that can influence community participation in upstream waste management based on *the Jeknyong application* Supporting Purwokerto *zero waste*, in general, is (a) general understanding the community regarding

the management of *the hangar* and PDU system is still lacking, (b) the perception of waste management in the *Jeknyong* application is generally quite good, but there are a small number who think that waste management can be done anywhere, the important thing is that the waste is thrown away, (c) the behavior of throwing waste into the PDU According to KSM, there is still little support because waste in general has not been sorted. (d) another factor is that the existing infrastructure in the PDU is not yet fully equipped. These factors influence participation in waste management in the hangar system and PDU based on the *jeknyong application*.

Constraints that become obstacles in the implementation of waste management using the hangar system, PDU based application *Jeknyong* towards Purwokerto *zero waste*, namely (a) there is generally trust in PDU management based on *the Jeknyong* application program still needs to be improved. (b) community participation in the *jeknyong* application system is still uneven, (c) the community has not fully participated, because they think that waste management is left to KSM as the PDU manager, (d) The waste collection officers are based on the *Jeknyong application*, with a pick-up system and their welfare has not been paid attention to by the partners who manage the *Jeknyong system*. (e) Another obstacle is there are people who are technologically *clueless* (not familiar with technology) in operating cellphones, so they cannot participate in the *Jeknyong application program* (f) *The location of the Jeknyong* system waste pick-up officers often changes, so that people have difficulty collecting their waste.

SUGGESTION

Based on the discussion above, the following suggestions can be made

First, there needs to be increased outreach to the public about the importance of managing the *Jeknyong* application system and *zero waste* waste management.

Second, the community needs to be given training on management methods *Jeknyong* application to achieve environmentally friendly and sustainable waste management towards *zero waste*.

Fourth. *Rewards* need to be given to community groups or individuals who have collected a lot of inorganic waste which has been collected in the *Jeknyong* application and the data has been recorded in the *Jeknyong administration*. Administrative sanctions need to be given to people who throw rubbish inappropriately.

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