PKM Application Of Science And Technology For Waste Processing, Digital Marketing And Accounting In Sanphora Village, Tangerang

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Abstract.

Tanggerang district government, Banten, has established a waste bank program so that waste can have economic value and residents do not throw it away carelessly. From data recorded at the Tangerang City Environmental Service (DLH), there are 361 operating waste bank points. In Sanphora village, especially Cilandak Baru village number 114, RT 04, RW 04. Based on the results of a survey by a team of lecturers and students after meeting with the head of RT 04 named Mr. Sutarman and his wife who served as head of PKK RT 04 named Mrs. Kusmiati with complaints that in the area of Sanpora village there has not been a Waste Bank established, so that a lot of waste is not processed, so that the environment becomes dirty and smells bad, which can cause disease for the residents around it. University and its students through this community service activity will solve the waste problem in Sanphora village in RT04, Tangerang, while this PKM activity will apply appropriate technology to make liquid fertilizer from organic waste, make handicrafts from inorganic waste and introduce simple accounting and digital marketing uses the Smart application to sell PKM products, where it is hoped that the products produced from this activity can be sold so as to improve the standard of living of PKK mothers, especially in RT 04 in Sanphora Village, Tangerang.

Keywords: *Waste Bank, Appropriate technology and Smart Applications.*

I. INTRODUCTION

1.1. Analyze the situation

In Sanphora village, especially Cilandak Baru village number 114, RT 04, RW 04. Based on the results of a survey by a team of lecturers and students, headed by mechanical engineering lecturer Wiwit Suprihatiningsih, MSi, Mercubuana University Jakarta, after meeting with the head of RT 04 named Mr. Sutarman together with his wife who served as head of PKK RT 04 named Mrs. Kusmiati with complaints that in the environment in Sanphora Village there was a lot of unprocessed waste, so that the environment became dirty and had an unpleasant smell which could cause disease for the residents around it. Organic waste is goods that are considered unnecessary and thrown away by previous users, but can still be used if managed using the correct procedures. Organic waste [Sidabalok et.al. 2014; Alfi Tranggono. et al. 2021]. is waste that comes from nature or is produced from natural activities. Garbage or organic waste can experience weathering (decomposition) and break down into smaller, odorless materials. In general, the most abundant component in waste in several cities in Indonesia is plant residue, which reaches 80-90% [Novi Marliani et al. 2014; Septiadi et al. 2017]. sometimes even more [[Andy et al.2019; Inawaty Sidabalok et al. 2014].I Gusti Ayu Arwati et al.2021]. Sampah di Desa Sanhpora juga demikian , sampah hasil masak di dapur dan sampah lainnya dibuang mereka disuatu tempat sampai menumpuk, maka dari itu salah satu cara untuk menanganinya ialah dengan mengolahnya menjadi pupuk[Andy et al. 2019].Inorganic waste is waste produced from non-biological materials, either in the form of synthetic products or the results of mining technology processing.

One way to handle inorganic waste is by recycling so that it can be made into something that has value and function. The definition of recycling here is one of the ways to use used goods to be reused into useful items or can also be processed into goods that can be bought and sold. Accumulation of waste can cause disease. This is because inorganic waste cannot be broken down, for example plastic [Zico Fakhrur Rozi et al. 2021; I Gusti Ayu Arwati et al. 2024; Zico Fakhrur Rozi et al. 2021]. Therefore, one of the best alternatives is

to process waste through recycling. Waste management aims to improve public health and environmental quality and make waste a resource. One way is to separate organic, inorganic, food waste and plastic trash cans [Aliva Rosdiana et al. 2021]. With this recycling, it is expected to overcome environmental pollution. This behavior also advances the nation economically so that it can improve the welfare of the PKK mothers in RT 04, Sanpora village Based on the background above, the purpose of this PKM activity is to provide learning about the importance of this waste problem must be overcome, where through several ways to change this worthless waste into something valuable, namely through technological processing using a composter, where this organic waste will be processed through fermentation to produce organic liquid fertilizer that can be sold, then the income of the PKK mothers in RT 04 will increase. Likewise, inorganic waste can be recycled into valuable and useful items such as wallets, trash cans, etc. To increase sales, it is necessary to conduct digital marketing and accounting learning.

Based on the situation analysis described above, the partner's problems are stated as follows:

Table 1. Waste problems of PKK partners in Sanphora Village, Tangerang

No	Partner Issues and Description The problem	Description
1	Piling up of organic waste	PKK administrators collect organic waste and will be given training on making liquid fertilizer from organic waste (especially vegetables and fruit)
2	Piling up of inorganic waste.	PKK administrators and staff will collect inorganic waste and will be given training on recycling inorganic waste to make goods.
3	Piling up of inorganic waste.	PKK administrators will be introduced to digital marketing and accounting knowledge with Zahir Accounting software. They will be given training on recording accounting transactions to simple financial reporting.

1. Purpose of the Activity Implementation: Community Service in Sanphora Village RT 04, Tangerang.

1. Partners are able to make liquid fertilizer.
2. Partners are able to make handicrafts from recycled inorganic waste
3. Partners are able to operate a simple digital marketing system and simple accounting for recording transactions to financial reports.

Related to MBKM, this activity involves students who will be recognized into certain courses as many as 6 credits. The IKU (Key Performance Indicators included in this activity are IKU 2 and 3. The focus of this community service is the green economy.Hasil Kegiatan Pengabdian Masyarakat.The PKM Team led by Wiwit, MSi from the Mechanical Engineering Department held the next meeting at the Mercu Buana University campus on June 20, 2024, discussing the technical implementation of PKM. Furthermore, the PKM Team held a meeting via zoom meeting with the PKK Chairperson, in Samphora Village in RT 04, the party responsible for the implementation of PKM activities. The meeting was held on July 13, 2024. Equipment in the form of a complete composter tool, a support tool for the composter tool, E4 Microbes, a sprayer, 5 units of Organic Waste Bins and Inorganic Waste Bins were sent to the partner's address in Samphora Village RT 04 at the residence of the PKK mother named Mrs. Kusmiati.

The PKM activity was carried out at the partner's residence which was attended by 20 PKK mothers, starting with the opening, handover of technology tools, presentation of materials, training and practice. This Community Service Activity is funded by the Ministry of Education, Culture, Research, and Technology (Kemdikbudristek). Hasil This PKM activity is in the form of technological tools, journals, IPR and increasing human resource capabilities to produce works in the form of liquid fertilizer, and handicrafts and how to make simple bookkeeping and how to trade using digital marketing by utilizing smart applications from each participant's cellphone. It is hoped that the results of this activity can improve the economic level of the participants of the PKK RT 04 Samphora Village in Tangerang by utilizing the sale of liquid fertilizer and handicrafts from organic and inorganic waste, where this useless waste becomes very useful and even makes money, based on the results of the questionnaire, almost 90% of the participants strongly agree with this PKM activity. Some of the results of PKM activities can be seen in the photo below Figure , Figur 2 and Figure 3.

Fig 1. Handover of equipment from the head of the Community Service Team

Fig 2. Counseling and training in making liquid fertilizer and Handicrafts

Fig 3. Digital Marketing and Accounting Counseling and Training Using Smart Applications

3.1. Processing Organic Waste into Liquid Fertilizer

The PKM team presented training materials on making liquid fertilizer from organic waste. Then practiced with the participants. Organic waste that has been separated by the partner, is chopped and put into the Fermentor machine. Waste consists of 80% wet organic waste and 20% dry. The PKM team explained in detail and they immediately practiced. After the organic waste is put into the fermentor, every 7 days the composter window is opened so that the gas comes out of the Fermentor tool After 21 days of being left, God willing, liquid fertilizer will come out of the hose at the bottom of the composter. Here is a detailed picture: (Figure 4)

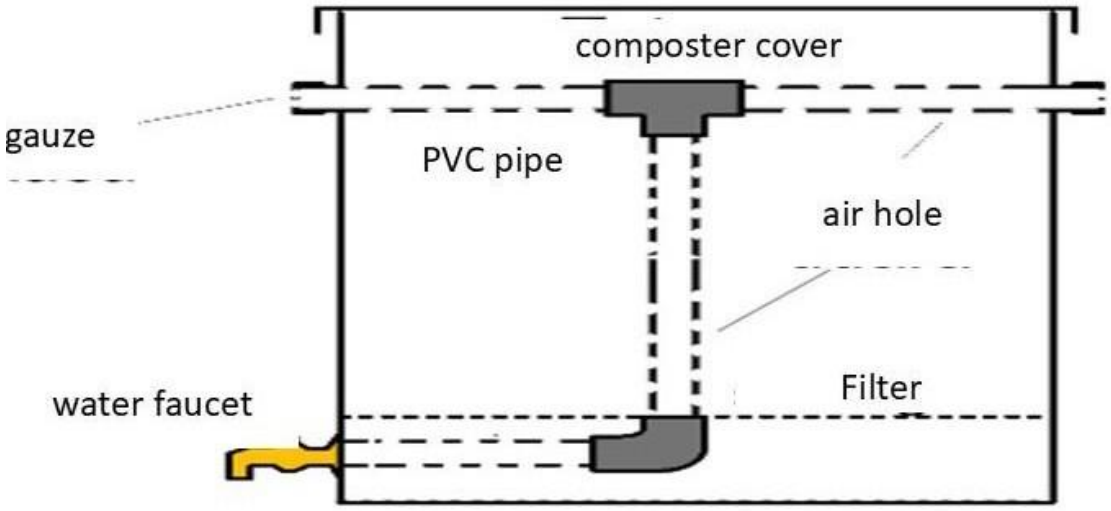

Fig 4. Design of the compost making machine. Inside the compost making

The liquid filter in the bucket can be made from a used bucket lid that is evenly perforated. The same holes are also made in the PVC pipe inside the bucket. Exterior-Composter-Filter Installation In order to sit properly, the filter can be added with four legs from 7 to 10 cm long pieces of PVC pipe that are tied vertically at the bottom like the model above.Utilization Before being put into the composter, the organic waste from the kitchen is reduced in size. Sliced with a knife or scissors. If you want the composting to take place faster, you can add a starter liquid for compost such as EM4 or Boischa. This liquid contains microorganisms that will help the composting process take place faster.To get more active microbes, the EM4 bio activator liquid can be dissolved first in water with the addition of molasses or sugar water.

The solution is stored in a closed container for several days until a distinctive sweet and sour aroma is smelled. After being sprayed/wetted with this starter fluid, the ingredients are then put into the composter. This process can be done at any time until the composter is full. In this composting process, in addition to producing solid fertilizer, it also produces liquid fertilizer/leachate. This liquid contains not only the remaining compost starter water containing microbes but also liquid that comes out of rotting organicmaterials. The liquid that collects at the bottom can be used as liquid fertilizer. Liquid fertilizer that is too thick or not fully cooked will actually make your plants overheat and even die. Liquid fertilizer needs to be diluted before use. A number of practitioners provide a recipe for one part of this liquid fertilizer mixed first with twenty-five parts water before being given to the plants. Please experiment with the dilution, for example 1:10, 1:15 or 1:20. After the organic waste has been fermented for 3 weeks from 100 kg of waste, 3 L of liquid fertilizer is obtained that is ready to be used and sold.

3.2 Handicraft Activities, Simple Bookkeeping and Digital Marketing

The results of the activities produced in community service activities in Sanphora village, especially PKK mothers, are of several types, where the processing of organic waste using this Fermentor produces organic liquid fertilizer, from inorganic waste such as plastic can produce some very unique handicrafts, such as pencil cases, wallets, etc. [I Gusti Ayu Arwati et al. 2024]. The products produced by our team are taught how to sell so that this product can be economically profitable as well as simple [Kieso et al.2017; DEWI ET AL. 2021; Lukas et al.2019] accounting learning for recording goods and making simple reports using the Smart Application (Figur 5).

Fig 5. Simple accounting and digital marketing learning through the Smart Application Program using

II. CONCLUSION

Pkm Activities at Mitra Ibu Pkk in Sampora Village, Tangerang Regency Have Been Implemented and Completed According to Target, Which Include:

1. Processing organic waste into liquid fertilizer.
2. Processing inorganic waste into handicrafts.
3. Preparation of a business unit accounting system using the Smart Application.
4. Training in marketing strategies based on digital/digital marketing.

The outputs of this activity are: activity videos, publications on the online media jurnalkampus.com, scientific publications in international journals, intellectual property rights (copyright)/IPR, increasing community understanding and skills

III. ACKNOWLEDGEMENTS

We, the researchers, would like to thank the funder for the 2024 fiscal year, the Ministry Of Education, Culture, Research And Technology (Kemdikbudristek) Through The Directorate General Of Higher Education, Research And Technology (Ditjen Diktiristek) with contract numbers 859/ll3/dt.06.01/2024 and 01 -1- 4/721/spk/vii/2024. and we would like to thank the LPPM team who also helped so that this activity could be carried out. can be carried out well and the results of this service activity are very beneficial, especially for the pkk women in Sanphora village rt04 Tangerang.

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