

OPTIMIZING THE PROCESSING OF HOUSEHOLD WASTE INTO COMPOST IN SUMBER BAKTI VILLAGE, NAGAN RAYA REGENCY

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Abstract

Garbage is a problem that must be overcome considering the negative impact it has on human health and the environment. The waste problem is also a challenge for the people of Sumber Bakti Village, because a lot of garbage is scattered around the village which has a negative impact on community health and the village environment. To minimize waste problems, there must be organic waste management which aims to be able to benefit from economic, social, sustainability and environmental insight. This waste optimization activity involved the Mawar Women Farmers Group of 30 people. starting from the stage of socialization to the stage of making organic fertilizer. The method used begins by distributing questionnaires to the Rose Farmers group, to find out the development of understanding and experience in utilizing household waste to become organic fertilizer and vegetable cultivation. This training activity on making compost and cultivating vegetables in a vertical manner was carried out in Sumber Bakti Village, Darul District, Nagan Raya Regency. As well as members of farmer groups can add knowledge in the use of household organic waste, as well as a much healthier environment, and can improve the economy.

Keywords: *Fertilizers, Vegetables, Farmer Groups*

1. INTRODUCTION

Garbage is a problem that must be addressed considering the negative impact it has on the health of both urban and rural environments, they must have problems related to waste management in their environment. Therefore, proper planning and approach is needed with regard to the method of processing waste in each region (Pramana Putra et al., 2022). Currently waste has become a serious problem that must be addressed by the government and society, especially in maintaining environmental sustainability and health. Garbage is generated from activities in homes, offices, markets, terminals, ports, roads and in various other places. Scattered waste can damage the environment resulting in environmental pollution (Wayan Anik Leana et al., 2022). According to the Law of the Republic of Indonesia Number 18 of 2008 concerning Waste Management, what is meant by waste is the residue of human daily activities and or natural processes in solid form. This waste is produced by humans every time they carry out their daily activities. Waste management applies a new paradigm, namely holistic waste management from upstream to downstream. To minimize waste problems, there must be waste management from the source. Waste management is a systematic, comprehensive and continuous activity that includes waste reduction and handling. Waste management needs to be carried out in a comprehensive and integrated manner from upstream to downstream so that it provides economic benefits, is healthy for the community and safe for the environment and can change people's behavior.

The waste problem is also a challenge for the people of Sumber Bakti Village, because a lot of garbage is still scattered around the village and causes negative impacts on the village environment such as clogged gutters, lots of mosquitoes, bad smells, and people who are very susceptible to

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disease. To reduce organic waste is by processing waste into organic fertilizer, it can be useful and has a sale value. Organic waste generated from households in Sumber Bakti Village, can be in the form of leaves or kitchen waste from fruits, vegetables, food scraps and other types of waste that are usually generated by every household activity. Organic waste can be processed into organic fertilizer or solid compost. Composting is a process by which microorganisms break down organic waste into organic fertilizer. Organic fertilizers can be used to fertilize ornamental plant media, fruit plants, vegetables, gardens and others. Provision of solid fertilizers to restore and accelerate soil fertility is very beneficial for soil and plant fertility

So far, the people of Sumber Bakti Village have only collected garbage in a hole dug in their yard which is then burned. Waste processing that was previously based on collection and then burning, has been changed to waste processing with a waste segregation pattern, utilizing, and destroying (what is not used at the waste source). So far, the people of Sumber Bakti Village have only collected garbage in a hole dug in their yard which is then burned. The results of the initial survey that has been carried out, the majority (90%) of the members of the Mawar Wanita Farmer group know the various types of organic and inorganic waste. 30% of them have done waste sorting between organic and inorganic, while 70% have never done waste sorting. The ORMAWA PPK TEAM conducted education to members of farmer groups in waste management and waste segregation to facilitate the practice of making organic fertilizer. Based on the results of the analysis above, the partners' problems are as follows: (1) organic and inorganic waste has not been separated from the rest of the household waste, (2) organic waste is generated from the environment around the house, (3) lack of knowledge of group members Mawar Wanita Farmers in addressing the problem of organic waste, and (4) members of the Mawar Wanita Farmer group do not know how to properly use and process organic waste into compost.

The Ormawa Capacity Strengthening Program aims to carry out outreach, education and assistance to the Mawar women farmer group in terms of processing organic waste into organic fertilizer so that it can be used in vegetable cultivation activities. By raising the topic "Optimizing Household Waste Processing into Compost Fertilizer in Sumber Bakti Village". According to the Big Indonesian Dictionary (KBBI), that optimization comes from the word optimal which means the best or highest. Optimizing means making the best or the highest. While optimization is the process of optimizing something, in other words the process of making something the best or highest. So, optimization is a process of optimizing something or the process of making something the best. *Participatory Rural Appraisal*(PRA) is an approach that invites the community to participate in the process of building and developing an activity. The birth of the community participation method in development was due to criticism that society was only treated as an object, not a subject. The PRA method is a development of previous methods, including the Rapid Rural Appraisal (RRA) technique which lacks in inviting stakeholders to participate in programs or policies.(Chambers, 1994). Development through participation demands an active role from the community in mutual cooperation and deliberation, with the aim that what is being planned by all parties involved can be carried out properly. Community empowerment and participation are strategies in the people-centred development paradigm. PRA implementation emphasizes community involvement in all activities. Increasing the independence and internal strength of the community.

PRA is an approach or method that allows village communities to share, improve, and analyze their knowledge about village conditions and life, as well as make concrete plans and actions(Chambers, 1994).

2. RESEARCH METHODS

This community service activity was carried out in Sumber Bakti Village, Nagan Raya Regency, Darul Makmur District, West Aceh for 5 months in July - November 2022. The activity site is 88 KM from Teuku Umar University. The method used begins with observation and FGD (Focused Group Discussion) to identify waste problems in Sumber Bakti Village. The next stage of activity is to plan training on making compost and cultivating vegetables in a verticultural way. This will be held in Sumber Bakti Village, Darul Makmur District, Nagan Raya Regency. Furthermore, the implementation of the activity involved the Rose Women Farmer group with a total of 15 group members (50% participation rate). The tools in this activity include: Gloves, hoes, machetes, shovels, buckets, and compost bins/barrels. While the materials used include: Leftover vegetables and fruit from household waste, leaves from the yard, EM4, brown sugar/granulated sugar, dolomite lime, water, vegetable seeds, manure/livestock manure and soil. The implementation of the training activities for making compost and cultivation in a verticultural manner is carried out in two stages, namely: (1) namely an explanation of the technicalities of making compost and cultivating vegetables in a verticultural way (2) The second stage is the provision of training in making compost and making verticulture for vegetable cultivation. At the end of this activity an evaluation was carried out to determine the level of understanding and success of the members of the Rose Women Farmer group who attended the training. Indicators of success in this activity were measured by the level of participation of the members of the Mawar Women Farmer Group in Sumber Bakti Village and their technical skills in making compost and cultivating vegetables in a vertical manner.

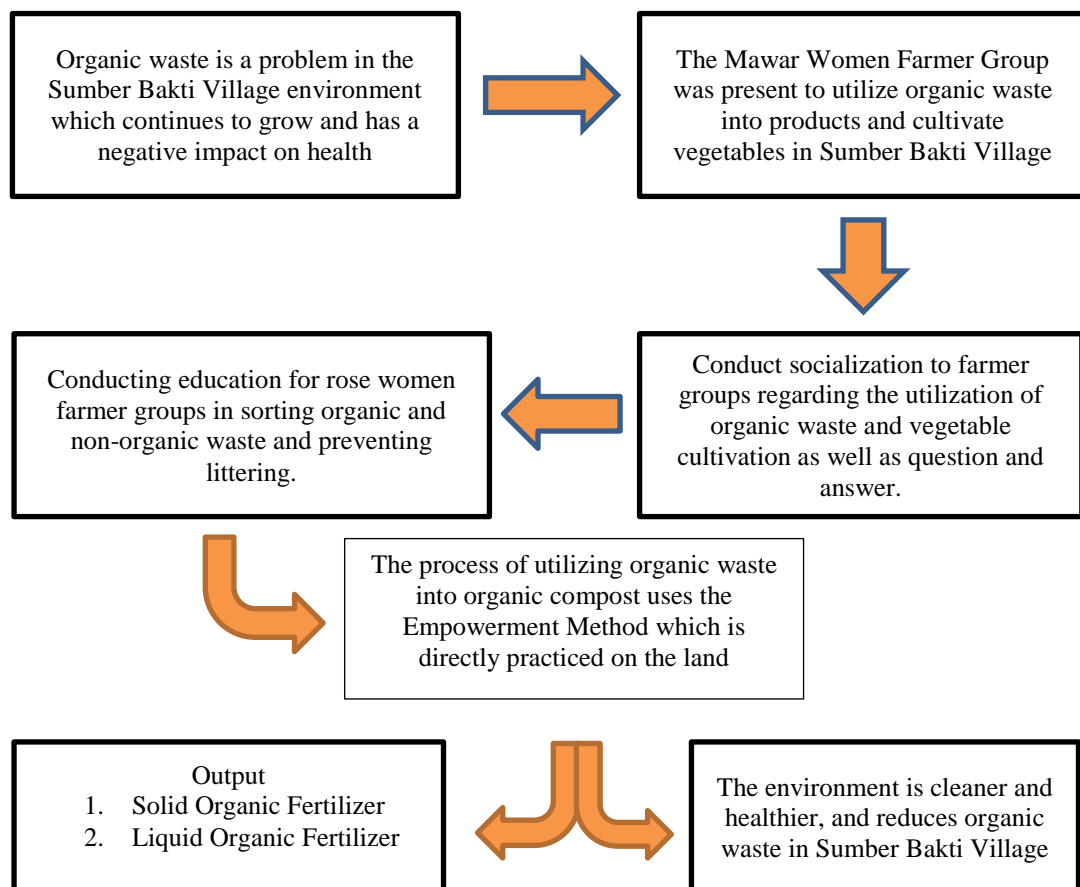


Figure 1. Research Flowchart

3. RESULTS AND DISCUSSION

3.1. Practice Activities and Assistance

Before empowering farmer groups, we made observations at several places in Sumber Bakti village where there is usually a lot of organic and inorganic waste to find out the problems regarding organic waste in Figures 2 and 3.



Figure 2. Household Waste



Figure 2. Garbage in public places (Village Hall)

The Ormawa PPK Team conducted a demonstration on making organic fertilizer from household waste to farmer groups, which was attended by the Village Head, Village Head, Farmer Groups and Village Communities in Sumber Bakti Village. It aims to be able to know the process of making organic diapers. Organic fertilizers are fertilizers that mostly or wholly consist of organic matter derived from plant or animal residues that have undergone engineering in the form of solid or liquid used to supply organic matter, improve soil physical, chemical and biological properties.(Harwiyanti, 2006).

(Hartatik et al., 2015)wrote that the raw materials for making organic fertilizers can vary, can come from plant residues (straw, stover, corn cobs, sugarcane bagasse, coconut fiber, leaves), sawdust, animal manure, mushroom media waste, market waste, household waste and factory waste, and forage, which causes the quality of the fertilizer produced to also vary.(Study et al., 2016)The C-Organic content found in organic fertilizers makes it different from inorganic fertilizers. Applying liquid organic fertilizer to plants can increase the C-organic content in the soil. that the addition of organic fertilizer can increase the C-organic content of the soil. high or low soil C-organic content is influenced by the amount of organic matter contained in the fertilizer. The next stage was to conduct an FGD (Focus Group Discussion) with the Mawar women farmer group to discuss the use of organic waste.



Figure 4. The Ormawa PPK Team Conducts Demonstrations to Farmer Groups



Figure 5. Focus Group Discussion (FGD) with the community

Organic waste is waste that can decompose and decompose so that it can be processed into compost. For example, food scraps, dry leaves, vegetables, and others. While inorganic waste is waste that is difficult to decompose and cannot be decomposed. However, inorganic waste can be recycled into something new and useful. For example plastic bottles, waste paper, cartons, used

cans, and others. Before making compost, students give directions and ask and answer questions to members of the farmer group, so that composting goes according to the procedure we want and increases knowledge.



Figure 6. Waste Segregation Process



Figure 7. The directing process in making compost

In the next stage, materials for making organic compost need to provide EM4, dolomite lime, manure, water, organic waste/bokashi, and the tools needed hoes, shovels, buckets, tarpaulins and barrels. At the manufacturing stage, put the manure into the barrel and adjust the thickness of the soil according to the place/container used. Then sow bokashi and dolomite lime, then flush using water that has been mixed with EM4 and, after that, sow again using manure on the top surface to cover the trash. Close the container tightly and let it ferment for about 3 weeks. Make sure the composting container is not contaminated by rainwater and is airtight, and also make sure the container is not exposed to sunlight or is called anaerobic(Nur et al., 2016).

After passing through the processing stage of composting, it's just a matter of waiting for the maximum maturity stage of the compost. After the compost is cooked, it is immediately sieved until it is smooth, then it is immediately packaged and made into a product. In the next stage, the utilization of organic waste into POC (Liquid Organic Fertilizer). At this stage the material used is the result of sorting organic waste, materials and tools in making POC using Bokashi fruit waste, EM4, water and containers/barrels. In the process of making POC, place the bokashi in a container, then fill the container with enough water, then add sufficient EM4 liquid and then tightly close the container and avoid exposure to sunlight.(Nur et al., 2016). The plants cultivated with the Mawar Wanita Farmer Group are kale and mustard greens in polybags. So, the results of the process of utilizing leftover household waste into fertilizer, can be directly applied to the cultivation of plants made by farmer groups. And farmer groups can enjoy the harvest from cultivating plants without the use of chemicals and without having to buy more vegetables at the market, so this process is called food security.

3.2. Activity Success Indicators

The survey results show that the indicator of success of the activity is an increase in knowledge about the types of organic waste and vegetable cultivation and how to use the output which is directly applied to vegetable cultivation, as well as having an impact on the environment that is much different than before the utilization of the remaining organic waste and after the utilization of the remaining organic waste. With the involvement of members of the rose women farmer group, the program ran smoothly according to the procedure. According to the group leader and members of the women's rose farmer group, the utilization of leftover organic waste and vegetable cultivation can save the need for daily vegetable shopping and can preserve the environment of Sumber Bakti Village.

4. CONCLUSION

The activity of utilizing household organic waste still requires supervision in the processing of making fertilizer and cultivating plants capable of providing added value in the form of increasing the knowledge of members of the Wania Mawar farmer group about the types of waste by 70%, increasing experience in cultivating plants by 30% and providing yields that can be used for consumption by members of farmer groups. Vegetable cultivation activities can save expenses to buy vegetables by 50%. As well as members of farmer groups can add knowledge in the use of household organic waste, as well as a much healthier environment, and can improve the economy. Members of the Mawar Wanita Farmer group must pay more attention to the environment, so that they can help reduce household waste and waste which can cause health problems and damage to the environment around Sumber Bakti Village, and can follow up on the use of organic waste so that the use of organic waste at home continues. stairs and environment.

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