



RESEARCH ARTICLE

ASSISTANCE INNOVATION FOR ORGANIC WASTE MANAGEMENT INTO COMPOSTER IN SUKAWARNA VILLAGE

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ABSTRACT

Sub-district is an urban area with a dense population and quite high levels of household and agricultural activity Sukawarna. The process of making compost This done using 3 types, namely, dip compost, solid-liquid compost, and solid compost. The capacity of organic waste 5 kg of processed compost processed and the process takes 20-40 days. The liquid compost from the process dip as much as 4.5 liters. For the solid-liquid composter, 1.8 liters of liquid compost has been produced, The solid compost yield is 2.1 kg. For the solid composter, the solid compost yield is 2.6 kg. Continue Public knowledge of waste management in general is still relatively small, on average only 50 %. This is influenced by the education level of residents, which is junior high school level, reaching 40 %. Regarding residents' experience in managing waste is quite good, namely 75 %. Then Public perception of management household waste is good, namely 7.5 % stated that they agree with waste management efforts from questionnaire data processing. With this high level of perception, it does not encourage a high level of citizen participation in waste management. As many as 41-57% of residents have never participated either directly or indirectly. directly to household waste management. Rubbish Households produce an average of 2-3 kg of organic waste per day, most of which is disposed of in landfills (or burned directly. This condition creates environmental problems in the form of pollution air, accumulation of organic waste and the absence of a circular economy-based organic waste management system. Composter is the right solution because it is able to process organic waste into environmentally friendly alternative fertilizer.

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INTRODUCTION

Rubbish Already become problem common experiences society. Most public Still understand rubbish as items that are not desired so that must quick thrown away. Then Perception public about rubbish this is what make rubbish only move place and finally pile up on one place just, for example place disposal end (TPA). If rubbish No managed with Good so will impact on the problem health in the form of emergence disease diarrhea, typhoid, cholera fever bleeding and disease others. Disposal trash in an inappropriate place should also be able to result in problem social even more Far Again Can impact on the problem economy. For example discarded garbage in the river Can result in very damaging floods in government about waste rubbish organic, because weakness manage rubbish. Management Contribution Waste Organic sub-district problematic:

- How to reduce household organic waste in the sub-district subdistrict Sukajadi?
- How to empower communities to produce compost independently with good management?
- How to create a model management operational independent fertilizer sub-district?

Meaning: 1) Not yet able to cope volume of organic waste, reducing waste These are two major challenges in sustainable development (SDGs). Meanwhile, the potential of utilizing organic waste as an alternative fertilizer source has not been optimally utilized. One promising innovation is converting organic waste into compost. Composter It has a high calorific value and can be used as an alternative material and soil enhancer. This technology is simple, inexpensive, and can be implemented at the village level. With the right implementation strategy, composting has the potential to overcome waste problems, create renewable fertilizers, and create fertilizer-independent villages. Utilization of organic waste that is oriented towards the multihelix ecosystem this aims building a creative and innovative society in product development, as well as improving competitiveness. This can open up opportunities to increase community involvement and actors efforts in the development and utilization of waste into coal. The aim of the research is to identify challenges and obstacles in Organic waste management sustainable and designing strategies and models (Ariani et al., 2020). PKM mentoring is related to IKU 2, where students carry out activities outside the campus and is an implementation Campus programs have an impact.

- Not yet able make recording Waste rubbish organic.
- Not yet able control cost fixed and variable and management operational rubbish organic.

Study results beginning show need scheduled training. As well as bookkeeping pkk which show loss. Interview done against 20 PKK mothers and those who were successful. From the results interview made compilation objective devotion society, for reduce. The weakness of PKK mothers. With method interview, syllabus, implementation, mentoring, evaluation and reporting end. Geographically, Sukawarna sub-district is strategically located between the city center and its surrounding areas. The distance from the Bandung City government center is. The area of Sukawarna sub-district is 80 hectares. Geographically, Dayeuhkolot sub-district borders:

North : Cipedes Subdistrict

South : Baleendah District

East : Sukawarna Subdistrict

West : Sukagalih Subdistrict

LITERATURE REVIEW / THEORY

Banana Mothers, Sukawarna Village: In Sukawarna sub-district, this is a sector that has a strategic role in improving conditions. Management Waste Organic Mother pkk. Partner Participation in The implementation of the program is provide location and PKK mothers For participate as well as in the planning and procurement process, PKK Mother's Community Partners provide facilities and infrastructure in the form of consumption during the seminar, as well as tool supporters other.

Solution to the problem of increasing Competence Organic Waste Management for recipient Mother's help PKK with stages:

- Provide training and assistance in composting.
- Encourage communities to process organic waste into renewable fertilizer.
- Form a composting business group. Sukajadi Mandiri. Reduce dependency

More details stages as following

Pre-survey of Improvement Needs Management Waste Organic.

The level of needs of the Sukawarna community can be known from interviews with Karang actors. starting from the initial pre-survey.

Organic Waste Management Training. Developing a technical guidance curriculum based on training analysis. Covering content management needs. Waste Organic PKK mother.

• Utilization / Feedback understanding Management Waste Organic. Implementer in practice Management Waste Organic in determine costs and the price includes settlement problem :

- What is the constraint in Management Waste Organic ?
- Where is the training ? Management Waste Organic will implemented ?
- Why must There is Management Waste Organic is good for mothers Banana pkk ?
- Who only those involved in implementation Management Waste Organic Mother pkk ?
- When will it be implemented? Management Waste Organic the done ?
- How Management Waste Organic the implemented on PKK mothers ?
- Make need tools and plans budget

Made from paid needs, needs Technical Guidance in the form of facilities and infrastructure and tools write related implementation Technical Guidance.

Event roundup: In the form of timetable training, teachers, materials and facilities tool as well as the required place.

Mentoring: Objective mentoring, schedule assistance agreed upon by the participants source, mother pkk, and sub - district, participants

present, guidelines assistance, as well as instruments/ tools mentoring.

Seminar: Make material presentation source person, presentation chairman team and members team. Prepare questionnaires, tools and budget.

Compilation Final report: Report end in the form of data before devotion society and after which it contains data, graphs and diagrams.

Executive Summary: In the form of analysis and synthesis data from Report Community Service. Coal biogas products capable produce output output from Management Waste Organic ones has formed.

The matrix Which containing: 1. Problems; 2. Solution; 3. Results from the solution

Example:

Problem	Solution	Results
1. Organic Waste Management	1.1. Knowing user needs (Interviews, Surveys, Analysis)	1.1 Description of Organic Waste Management Needs
	1.2 Creating Technical Guidance and Training (Costs) fixed, cost variables price and profit)	1.2 Implementation of activities
2 Organic Waste Management PKK Mothers	2.1. 1.1. Knowing user needs (tools, infrastructure, budget)	2.1 Description of Organic Waste Management Needs
	1.2 Creating Products that Users Love (Training and Seminars)	2.2 Implementation of activities

Improvement management finances used in devotion public includes:

- For the Community: Saves fertilizer costs, creates a cleaner environment, and creates new business opportunities.
- For Regional Governments: Support the target of 30% waste reduction and the use of renewable fertilizers.
- For Academics: Applying science to society and producing scientific publications.

Management Process Recording and Management Operational Waste Organic

- Guidance Technical recording Pricing including planning cost still that is that is, the permanent one issued to something type product.
- 2.Cost planning variables, namely changing costs change in make product
- Determining the price, which will determine the appropriate basic price for the product or service and must determine the various variables involved.
- Reporting the benefits obtained.
- Management Operational Waste organic waste.

METHODOLOGY

The implementation method consists of:

- Preparation Stage: Survey of household organic waste volume and program socialization.
- Training & Mentoring Stage: Workshop on making organic waste. recording report simple pyrolysis equipment and production practices.
- Implementation Stage: Management Operational Compost production by community groups and its utilization.
- Evaluation & Sustainability Stage: Monitoring results, impact evaluation, and Sukajadi roadmap.

Planning that is done team mentoring

- Interviews with 20 perpetrators
- Interview on the needs of PKK mothers
- Field Observation of Solutions, Obstacles and Financial Problems for PKK Mothers
- Organic Waste Management Seminar for PKK Mothers
- Feedback from action plan* users creates a final report on Organic Waste Management. PKK mothers before and after implementing community service.

Problem solutions can be resolved according to the scientific expertise of the service team where the Chair's Scientific Expertise: Accounting, Member I's Scientific Expertise: Communication and Member II : Engineering (Management) Operational) assists with procedures in the field.

Benefit he did PKM mentoring:

- Establishment of the Sukajadi Mandiri Composter Business Group.
- Registration Report and Reduction of organic waste by at least 30%.
- Management Operation Ready-to-use compost products.
- Scientific publications and popular articles. 5. Models management operation program replication.

Problems in the field of Organic Waste Management:

Problems	Solution	Method	The steps
1. Organic Waste Management and Implementation Banana PKK	1.1 Improvements Management Waste Organic	1.1 Training and empowerment of Organic Waste Management	1.1: Coordination of PKK mothers, Sukawarna sub-district
2. Lemlit Report	1.1 Management Waste Organic Increase	1.1 Seminar	1.1: Coordination of pkk mothers and Sukawarna sub-district

There was a budget shortfall, which the Sukawarna sub-district assisted with, allowing the implementation method to be implemented effectively. When this is in Sukawarna remaining garbage or organic waste this is just thrown away in a pile in the form of roadside, rice fields or gardens.

The longer The amount of this garbage will continue to pile up. Because of the unpleasant smell that produced by this organic waste because containing ammonia compounds will be very interferes with breathing. This waste also produce fluids that will damage groundwater, soil structure and nutrients in the soil. Sukawarna residents have not yet utilized the plants This residue becomes fertilizer. Farmers still utilize fertilizers sold on the market. Organic waste conversion activities become compost for farmers in Sukawarna This aims to:

- Invite Sukawarna residents to be more sensitive environment, one of which is through separation organic and inorganic waste
- Provide information about the process composting organic waste
- Produce organic waste processing tools into compost
- Practice using processing tools organic waste
- Provide motivation to use the tool and the process of processing organic waste continuously, so that it can reduce or even eliminate costs for fertilizer purchases

- Provide information that this activity also can be a source of income additional, namely through the sale of fertilizer the resulting compost.

Then benefits that can be taken from activities this is:

- Become a solution in waste processing or organic waste
- Produce compost fertilizer that can be used utilized by Sukawarna farmers
- Reduce dependence on fertilizers inorganic sold on the market

Increase residents' income

This organic waste processing tool consists of a drum as a place where the process occurs Composting process drum equipped with a perforated filter on the part middle, so that the liquid and solid fertilizer results can be obtained directly. The composting process which is used is aerobic, then manual stirring is done. As Complements will also include EM4 solution, gloves, shovel, thermometer, scissors. The capacity of organic waste that can be processed is as much as 5-8 kg. collected per week 5 kg

This composting tool is a simple tool. which can also be made by residents. This tool operated manually. This means that the process shredding, putting waste into drums, giving EM4, stirring, and turning done manually. Enumeration of Organic waste is needed so that the composting process takes place more quickly. Stirring and reversal is needed so that the bacteria that helps the composting process remain active.

This composting process will last for 20-40 days with reversal every 3 days.

Community service activities This society is as follows:

- Socialization to Sukawarna residents about waste utilization technology organic.
- Design of processing equipment installation organic waste (determine the location and technical specifications of the tool).
- An organic waste processing tool and installation of equipment on site.
- Socialization and training of manufacturing techniques organic compost fertilizer.
- Socialize the benefits of compost fertilizer.
- Socialize the benefits that can be obtained obtained by residents by utilizing organic waste processing tool.
- Evaluation of the results of the implementation of activities.

RESULTS

Implementation of Community which can be used as material for in-depth discussion:

Changes in People's Mindset and Behavior: One of the key achievements of this activity was a shift in public perception regarding the importance of waste management, especially kitchen waste. Through educational activities and hands-on composting, residents began to understand that waste is not just a hygiene issue but also impacts health, the environment, and even economic potential. The participants' enthusiasm was evident in their active participation in the discussion sessions and their eagerness to try composting at home. This demonstrates that a practical, participatory approach is more effective than simply providing theoretical material.

Effectiveness of Participatory Approach: This program uses a participatory approach, involving integrated health post (Posyandu) cadres, Family Welfare Movement (PKK) mothers, youth groups, and community leaders as agents of change. This approach has been proven to increase the community's *sense of ownership* of the program. Furthermore, the active participation of the village government, Bank BJB, the Cimareme Community Health Center, and the 3R Education Saung is key to the success of encouraging cross-sector collaboration. This collaboration strengthens the program's

sustainability and facilitates the adaptation of innovations at the household level.

Composter Innovation as a Technical Solution: The composter innovation has been successfully introduced and applied in the community as a technical solution for managing kitchen waste. against 5 kg of waste per day in RW 02. At a relatively low cost, composting can be implemented by almost all households in the village. Using compost not only helps reduce waste volume but also produces liquid and solid fertilizer that can be used for home gardens or sold, potentially providing additional economic value for families.

1. Increasing Community Economic Capacity. Through training on digitalization and marketing of processed waste products with Bank BJB, the community, particularly MSMEs, is beginning to see business opportunities in waste management. This training has opened new insights into digital marketing, product branding, and simple business management.

Challenges and Opportunities

Despite many positive achievements, there are several challenges that still need to be overcome, including:

- Limited reach of education to all levels of society due to limited time and resources.
- There is a need to strengthen regulations (Perdes) so that waste management efforts can be carried out in a more disciplined and structured manner.
- Long-term funding and mentoring support is needed to maintain the sustainability of the program.
- The Community Service (PKM) program in Sukawarna Village, which was implemented from May to January 2026, did not stop at the implementation stage alone. It also aimed to ensure the program's long-term benefits were felt by the community. A follow-up plan is a strategic step aimed at strengthening the program's impact, building community independence, and ensuring that behavioral changes in waste management are maintained. The follow-up plan that has been prepared is as follows:

Assistance in the Use and Distribution of Composter

- Continuing to provide assistance to residents who have received training in making compost so that they can apply it optimally in their respective homes.
- Encourage PKK mothers to become agents for socializing the composter to other residents who have not been reached in the initial stages.
- Conduct regular monitoring to evaluate the success of the Composter implementation and provide solutions to technical problems that residents may face.

Preparation and Implementation of Village Regulations (Perdes) on Waste

- Encourage the acceleration of the drafting of Village Regulations (Perdes) which regulate the obligation to sort waste, the prohibition on burning waste, and sanctions for violators.
- Holding a discussion forum with the village government, community leaders, and residents to formulate a Village Regulation that is appropriate to the conditions and needs of Sukawarna Village.
- Monitor the implementation of the Village Regulation after it has been ratified, including further socialization activities so that all residents understand and comply with the applicable regulations.

Economic Development

- a. Value- added composter so that it can sold in the community. During This Still become consumption public local
- b. Building marketing networks between v*** composter as an effort to expand market reac

5. Documentation and Publication

- a. Continue documenting activities as evidence of achievements and learning materials for similar activities in the future.
- b. Publicize program activities and developments through official village social media, university websites, and reports to supporting partners to inspire more parties.

CONCLUSION

In general all activities can run well. From training held by the community increasingly understand the dangers of waste if not managed well. Knowledge This then has an impact on waste management culture initially thrown away anywhere Now it's changed. Garbage is separated first among organic waste and inorganic and organic waste is processed in the composter and will produce compost fertilizer. The response of the target community to This activity is very good. As explained in the Management Team section the management team works with enthusiasm and enthusiastic about implementing this program.

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