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OPTIMIZING LETTUCE PRODUCTION THROUGH THE USE OF COMPOST PLANTING MEDIA TO INCREASE THE INCOME OF INDIGENOUS PAPUANS IN SORONG REGENCY

Hendra Sudirman *, Yoga Andriyan, Aldila Mawanti Athirah, Luksen Helkia Smur, Ramles Rahakratat, Apner Saa, Giffard. R. K. Puarada, Falentinus Fadan
Universitas Pendidikan Muhammadiyah Sorong
Jalan K.H. Ahmad Dahlan No.1, Mariat Pantai, Aimas, Kabupaten Sorong, Papua Barat Daya, 98418, Indonesia
Email: hendra_agri@unimudasorong.ac.id

Abstract

This community service activity aims to increase the productivity of lettuce agriculture and the economic welfare of the indigenous Papuan people in Sorong Regency. Sorong Regency is still very dependent on other regions to meet the needs of vegetables because vegetable productivity in Sorong Regency is still very low and people's interest in becoming farmers is still very low, which causes the need for local food, especially vegetables. Low knowledge and skills of members of the Osok Women's Group (75% did not graduate from elementary school). The Osok women's group is dominated by indigenous Papuans who do not have sedentary jobs and have low education. There has been no effort developed in the Osok Women's Group and has not been maximized in the organizational arrangement of the group. The solution to the problems faced by Osok women is by conducting socialization and training in making compost planting media. The use of compost planting media was chosen because compost is proven to increase soil fertility naturally, is environmentally friendly, and has lower production costs compared to chemical fertilizers. This activity involves socialization and training to local communities regarding the manufacture and application of compost planting media in lettuce cultivation. Through composting techniques using local organic materials, such as plant residues, and organic waste. The stages of implementing the service are preparation, interviews, socialization of making compost planting media, training in making compost planting media, evaluation and reporting. The results of this activity show that this service activity shows several important results, both from agricultural and socio-economic aspects of the community. There is an increase in the knowledge and skills of the Osok Women's Group by 100%. 80% of organic household waste is converted into compost and there is an increase in household income of 5-10%. This activity has had a positive impact on the indigenous Papuan community in Sorong Regency, especially in optimizing the potential in a sustainable manner and increasing income. This program is expected to continue to grow and provide long-term benefits for the welfare of the local community.

Keywords: Compost, Community Income, Lettuce Production, Optimization, Papua

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INTRODUCTION

The Osok Women's Group is located in Jalan Osok, Aimas, Aimas District, Sorong Regency, Southwest Papua. Aimas district is included in poor and disadvantaged areas. However, in this disadvantaged area, there is the Osok Women's Group. Road access to the location is still not good, where you have to pass through a dirt road. The Osok Women's Group is categorized as a non-productive community group. Sorong Regency is still very dependent on other regions to meet the needs of vegetables because vegetable productivity in Sorong Regency is still very low and people's interest in becoming farmers is still very low, which causes the need for local food, especially vegetables. In addition, Sorong Regency is still dependent on other regions. On the other hand, the potential that Sorong Regency has is very wide for land availability.

National food security requires sufficient food supply nationally and regionally. However, this supply is not enough to meet the food needs of every household or family (Ariyanto, MP and Sudjianto 2022). To achieve national food security, food problems in community life still require proper handling (Rangga et al. 2022). Reviving the culture of planting in yards, both in cities and in rural areas, is necessary to ensure the conservation of food crops for the future (Widarawati, Prakoso, and Naila 2021). As a result, to ensure the availability of family food, each household is expected to optimize the resources they have, including the yard (Jayaputra, Santoso, and Jaya 2021). Yard land in housing, although in a smaller space, has a lot of potential to be utilized. A family can optimize the yard to provide their food (Slamet et al. 2023). The use and role of yards vary in each region, influenced by socio-cultural needs, education, community needs, and local physical and ecological factors (Anggraheni and Hanifuddin 2021).

Strengthening food security can be achieved through the development of local commodities, increasing agricultural productivity, intensive and sustainable coaching and assistance in community empowerment programs, improving work networks, and the commitment of all stakeholders to improve community welfare (Jayaputra, Santoso, and Jaya 2021). One way to achieve food security and family income is to grow vegetables (Sudarwati and Aini 2022). The use of yards can help household food security by increasing energy and protein sources and increasing food diversification (Rini Setya 2023). By encouraging women to use their yards as a source of family food by planting a variety of vegetable crops (Priyatna et al. 2023). Thus, the role of the yard can indirectly affect household finances (Sukenti et al. 2019).

Today, household farming is very popular. However, people's views of science, place, and time make it difficult (Sarkono et al. 2020). Mothers must be smart and able to utilize their environment to improve their quality of life and quality of life (Siregar 2021). Because mothers do more housework on their own, there is a considerable opportunity for mothers who are members of the peasant women group to use the yard land (Sasora et al. 2022). Kitchen waste can be processed into compost and liquid organic fertilizer, which can help manage household waste (Yuliana, Ami, and Hariono 2021).

This service activity aims to increase lettuce production through the use of compost planting media and at the same time increase the income of the indigenous Papuan people in Sorong Regency. Compost is an organic material that can be used to produce plant nutrients from plant and animal waste as well as organic waste that has been processed through

fermentation (Febrianto and Hayati 2022). Compost fertilizer can be made by yourself using organic materials that are easy to obtain and cheap. Making it with agricultural waste or organic waste is very profitable because it does not require large capital (Hidayat, Iqbal, and Susilo 2021).

Lettuce is a type of leafy vegetable that has high economic value, but its productivity in this region is still relatively low. This activity prioritizes the use of compost as a planting medium that is more environmentally friendly, cost-effective, and able to increase soil fertility.

The activity is to provide socialization and training on the manufacture of compost planting media, as well as the application of compost in lettuce cultivation to increase agricultural productivity and income of indigenous Papuan people in Sorong Regency. This activity focuses on introducing the concept of sustainable agriculture through the use of organic waste as a source of compost, which is expected to be able to replace dependence on chemical fertilizers.

Organic fertilizers such as compost are the perfect decomposition products of plants or animals (Mawardiana and Karnilawati 2022). Compost is chosen because the raw materials are easy to obtain, as well as its proven benefits of increasing soil fertility. This socialization activity is expected to provide new knowledge and skills for the community, so that they can optimize the potential of agricultural land and improve economic welfare through increasing lettuce production. Compost fertilizer is one way to optimize plant growth and productivity (Hakim et al. 2021).

Compost was chosen for its abundant availability of local organic waste, as well as its ability to improve soil structure, increase organic matter levels, and provide nutrients in a sustainable manner for plants. While household waste can pollute the environment both the physical environment and public health, if managed properly using appropriate technology, they can be used as compost to fertilize the soil and used as a production input in agriculture and yard management (Jayaputra, I Komang Damar Jaya, and Bambang Budi Santoso 2022). Thus, the use of compost is expected to optimize lettuce yields while contributing to agricultural sustainability in Sorong. Farmer groups can use their waste to make organic fertilizer (Tobing et al. 2023).

The problems faced by the Osok Women's Group can be seen as follows:

1. Social Aspects of Society: Low level of skills and knowledge of the Osok Women's group (75% did not graduate from elementary school).
2. Management Aspects:

a. There has been no business developed in the Osok Women's Group.
b. It has not been maximized in the organization of the group.

The focus of Service is to increase knowledge and skills. This program supports the SDGs, namely

1. Eliminating poverty, by empowering the community, especially the Osok Women's Group, will provide jobs to increase family income so that it has an impact on zero poverty.
2. Decent work and economic growth, improving the economy of the Osok Women's Group by empowering natural and human resources in the local community which will provide decent work and local economic growth.

3. Responsible consumption and production, by producing environmentally friendly agricultural products.

The priority problems of the Osok Women's Group include the following aspects:

1. Social Aspects of Society: Low knowledge and skills of members of the Osok women's group (75% did not graduate from elementary school). The Osok women's group is dominated by indigenous Papuans who do not have sedentary jobs and have low education.
2. Management Aspect: There has been no effort developed in the Osok women's group and has not been maximized in the organization of the group.

IMPLEMENTATION METHOD

Based on the problems faced by the Osok Women's Group, a solution was given, namely Socialization and Training on Making Compost Planting Media.

The stages of implementation in this activity can be seen as follows:

1. Preparation

The implementation team conducted a location survey through initial communication with the Aimas Village Government and the Osok Women's Group. From the results of the interviews, the service implementation team got a clear picture of the common problems faced by the Osok Women's Group.

2. Interview

The service implementation team conducted interviews with the Head of Aimas Village and the Osok Women's Group to get information related to the problems faced to be further provided with solutions.

3. Socialization of making compost planting media

The service implementation team provided socialization related to Optimizing Lettuce Production through the Use of Compost Planting Media to Increase the Income of Indigenous Papuan People in Sorong Regency to increase knowledge and skills in the Osok Women's Group by making compost fertilizer from household waste.

4. Training on making compost planting media

The service implementation team provided training related to training on making compost planting media to the Osok Women's Group.

5. Evaluation

The evaluation of community service was carried out by the service implementation team and the service assistance team after carrying out service activities and the Research, Publication and Community Service Institute of the University of Education Muhamamdiyah Sorong.

6. Reporting

In this stage, the service team makes a service report from the service activities that have been carried out as a form of accountability for the implementation of service activities.

The implementation of service activities will be carried out on September 1, 2024 – September 30, 2024. The description of the implementation of service activities can be seen as follows:

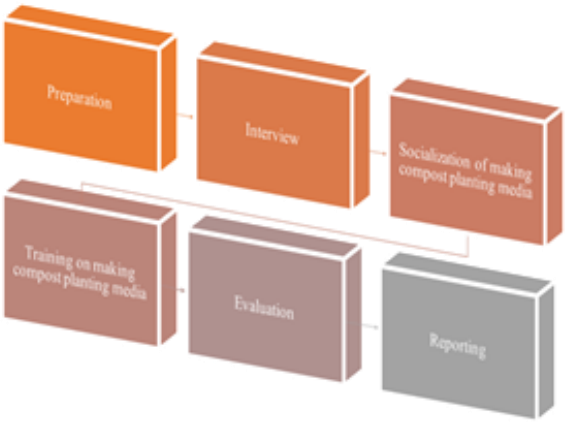

Figure 1. Activity implementation stage

RESULTS AND DISCUSSION

This service activity shows several important results, both from agricultural and socio-economic aspects of the community. There is an increase in the knowledge and skills of the Osok Women's Group by 100%. 80% of organic household waste is converted into compost and there is an increase in household income of 5-10%.

One of the main results of this service activity is the increase in public understanding of the importance of compost and how compost can be a better alternative to chemical fertilizers. Before the socialization, the majority of people were not familiar with the benefits of using compost. However, after these activities, they began to understand that the use of compost is not only more economical, but also more environmentally friendly and can improve soil fertility in the long run. The enthusiasm of the community for this activity is very positive. Participants showed great interest in learning about the composting process and its application in agriculture. This can be seen from their active participation during training, both in theory and practice sessions.

Figure 2. Socialization of Optimizing Lettuce Production Through the Use of Compost Planting

Media to Increase the Income of Indigenous Papuan People in Sorong Regency. Through the training provided, the indigenous Papuan people involved in this activity now have better skills in composting. They understand the basic techniques of composting, from the selection of raw materials, the fermentation process, to how to apply compost to agricultural land. Some indicators of training success include:

1. The results of composting carried out by the participants showed that the compost was of good quality, with a loose texture, blackish-brown color, and without a strong odor. This indicates that the composting process has been carried out well and successfully.
2. The community has succeeded in utilizing local organic waste such as dry leaves, food scraps, and livestock manure as raw materials for compost. This proves that compost can be produced independently at a very low cost.

Figure 3. Training on Making Compost Planting Media

After the composting training, the next stage is the application of compost on lettuce farmland. Land that has been composted shows better results compared to control land that uses chemical fertilizers. Lettuce plants planted using compost planting media grow faster and healthier than plants planted with chemical fertilizers. This can be seen from the height of the plant, the number of leaves, and the color of the leaves that are greener and fresher on the compost land.

The use of compost directly has an impact on increasing people's income. By producing your own compost, the costs that would normally be spent on the purchase of chemical fertilizers can be diverted to other needs. In addition, better lettuce yields from compost land open up opportunities to increase income through the sale of higher quality agricultural products and in larger quantities. In addition, the cost of agricultural production can be produced at minimal cost.

The socialization and training provided have had a significant impact on the knowledge and skills of the indigenous Papuan people in Sorong Regency. Prior to this activity, many farmers were still dependent on commercial chemical fertilizers without realizing the long-term negative impacts that could be caused. After the training, they not only understand the benefits of compost, but are also motivated to apply it in their daily farming activities.

Socialization also increases public awareness of the importance of organic waste management. Waste that was previously simply thrown away can now be used as a resource for

composting. This supports sustainable agricultural practices and helps preserve the environment.

The results of the application of compost on lettuce land show that compost has high effectiveness in increasing plant production. The organic matter content in compost is able to improve soil structure, increase water absorption, and provide nutrients needed by lettuce plants. This makes plants grow healthier and faster, and results in better harvest quality.

The use of compost has also proven to be more economically efficient compared to chemical fertilizers. In addition to the lower cost, compost has the long-term advantage of increasing soil fertility, so that production can be maintained or even increased in the next growing season.

The main challenge faced in this activity is the limited initial knowledge of the community about composting techniques. However, through intensive training and hands-on mentoring, these challenges can be overcome. The Osok Women's Group, which initially felt hesitant, was finally able to master the composting technique well and was ready to apply it independently.

Another challenge is the availability of compost raw materials in the dry season, when organic waste is difficult to find. To overcome this, it is recommended to store compost reserves in the rainy season or develop other organic resources such as green manure.

CONCLUSION

This socialization and training activity for making compost planting media has succeeded in increasing the knowledge and skills of indigenous Papuan people in Sorong Regency in optimizing lettuce production. The use of compost has been proven to increase plant growth and crop yields, as well as have a positive impact on increasing people's income.

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