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Building the Creativity of Bulurejo Village Community through the TASAPOT Cultivation in the Pandemic Era

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ABSTRACT

Bulurejo Village is one of the villages in Gadingrejo Subdistrict, Pringsewu Regency, Lampung Province. Bulurejo Village has a quite active Women Farmer Group (Kelompok Wanita Tani/ KWT) known as 'Ayu Tani', which was formed in 2014 with 27 members. Bulurejo Village is one of the villages that has the potential to develop the cultivation program of potted vegetable plants (Tanaman Sayur Dalam Pot: TASAPOT). TASAPOT cultivation is conducted to increase the consumption of various food sources in the form of vegetables with the principles of being nutritious, balanced, diverse, and healthy, so that organic farming can be applied during a pandemic era with the aim of increasing body immunity. This community services program aims to equip the community of Bulurejo Village with theoretical and practical knowledges regarding the cultivation techniques of vegetable plants in pots. The method used includes extension, discussion, mentoring, and training or direct practice in the field based on the initial evaluation as a basis for determining the knowledge level of the target partner's regarding the cultivation techniques of TASAPOT. The implementation of this community services program has succeeded to achieve the expected outcomes, namely increased knowledge of the community and members of the 'Ayu Tani' KWT in Bulurejo Village about the importance of Sustainable Food Houses (Rumah Pangan Lestari: RPL) and the cultivation techniques of TASAPOT to improve family's health the community's standard of living. In addition, there has been an increase in partners' understanding of the cultivation techniques of TASAPOT, starting from the benefits of utilizing the house yard, the growing media used, planting techniques, and plant maintenance until harvest.

1. Introduction

The house yard is an alternative that can be utilized to improve the household economy. Vegetables are the type of plants that can be grown and cultivated in the house yard to support family needs (Sugiarti, 2021). Yard is a land that has the potential to be developed as a household-scale industry and generate economic value for the family (Kurnianingsih et al., 2015). Efforts to increase food self-sufficiency can be conducted through the use of house yards to provide food stuffs for families (Ashari & Purwantini, 2012). Yards can be optimized to support food availability and also preserve the environment and biological resources (Sukenti et al., 2019).

Yard land can be utilized to produce food commodities that can be sold by the community to the market. Yard land has the potential as an alternative for family food preparation to produce hygienic and healthy vegetables so as to save household expenses in meeting family's food needs (Hidayati et al., 2018). Increasing food security is conducted as an effort to meet family's food needs because food is one of the human's essential needs (Saputro & Fidayani, 2020). Food security has characteristics as a form of food reserves for the government and society. Each member of the community is responsible for responding to the challenges concerning the food security and the government must be involved in providing adequate food for the community (Yani et al., 2020).

As a nutrition source for human, vegetables is one of the national food commodity that still undergo several obstacles in terms of cultivation. Many communities in general have not yet thoroughly understood how to cultivate vegetable plants in a creative way by utilizing limited area of land. Utilization of the house yard can be optimized by cultivating vegetable plants in pots. This is very possible because cultivating vegetable plants in pots does not need to occupy large area of land, but still can provide adequate yields to meet family's food needs. Vegetable plants that can be cultivated using pots include tomatoes, eggplants, chilies, lettuce, mustard greens, and so on.

Bulurejo Village is a village located in Gadingrejo Subdistrict, Pringsewu Regency, Lampung Province. Bulurejo Village has a quite active Women Farmer Group (*Kelompok Wanita Tani/KWT*) known as 'Ayu Tani', which was formed in 2014 with 27 members and chaired by Mrs. Wagiyem. Bulurejo Village has local potential in the form of rice fields, plantations, and fisheries. Bulurejo Village is one of the villages that has the potential to develop the cultivation program of potted vegetable plants (*tanaman sayur dalam pot/TASAPOT*). According to Paeru et al. (2015), vegetable plants grown in pots can produce food stuffs in the form of fresher and healthier vegetables because they are cultivated organically. The results of discussions with the Agricultural Head of the Technical Implementation Unit (KUPT) of Pringsewu Regency at the end of 2020 showed that the creativity of the Bulurejo Village Farmers Group could be increased even though it was only within the scope of the house yard. The pandemic era has encouraged the Bulurejo Village's KWT to continue carrying out productive activities. Cultivation of TASAPOT has a number of advantages, including being able to meet family's food needs, adding to the beauty around the house if the plants are arranged properly, and being able to preserve and nourish the environment thanks to the oxygen produced by these plants.

Community services program in Bulurejo Village was conducted because the majority of the residents work in agricultural sector. This was implemented specifically to empower and equip KWT members with a number of skills and solutions so that they are able to earn additional income for their respective families. According to Ginting (2010), cultivating vegetable plants in pots can increase the diversity of food consumption patterns and community's nutrition. In particular, the cultivation of vegetable plants in pots is expected to be able to meet the needs for vegetable food at the household level.

The diversity of food for the community of Bulurejo Village for sources of carbohydrates, protein, vitamins, fats and minerals is still not balanced. This is due to the lack of public understanding of the

meaning of balanced food and the lack of availability of food ingredients due to the low purchasing power of the community for these various foods. The low abilities and skills of 'Ayu Tani' KWT in cultivating vegetable plants and their low understanding of applying the TASAPOT technique in their house yard needs to be perceived properly by the community services team in order to be delivered as socialization material for the KWT. Therefore, there are three objectives to be achieved from this community services program, namely (a) empowering 'Ayu Tani' KWT with the abilities and skills to produce healthy and hygienic vegetables from their own yard to meet the needs for healthy food as recommended by government, (b) providing knowledge and alternatives for them to be able to save household expenses in meeting family's food needs, and (c) providing knowledge and skills to 'Ayu Tani' KWT to be able to optimize their house yard so that it is more productive and also beautify their house environment.

2. Methods

This community services program was conducted for six months. The target partners that were involved in this program include the administrators of 'Ayu Tani' Women Farmer Group (KWT) in Bulurejo Village and 10 Bulurejo Village officials, including the Head Village, Village Secretary, four Heads of Affairs, and four Hamlet Heads. The activities carried out include a variety of methods, namely extension, discussion, mentoring, and training or direct practice in the field based on the initial evaluation as a basis for determining the knowledge level of the target partners regarding the cultivation techniques of TASAPOT. The schedule of activities is presented in Table 1.

Table 1. Schedule of community services program.

Activities	The month					
	I	II	III	IV	V	VI
Field assessment (survey)	■					
Permission arrangement	■					
Implementation of initial evaluation		■				
Extension and training on the cultivation of potted vegetable plants (TASAPOT)		■				
Training on the utilization of house yards and cultivation of potted vegetable plants (TASAPOT)		■	■			
Implementation of mentoring			■	■	■	■
Women Farmer Group			■	■	■	■
Preparation of seminar papers and publications					■	■
Preparation of final report						■

In the early stages, the community services team provided information about the benefits of vegetable plants for health and showed examples through audio-visual shows about the households that produce vegetables to meet family's needs. At the next stage, the team provided vegetable cultivation training, starting from seed selection, seeding, to planting. At this stage, the team showed seedlings that ready for planting and taught how to plant them, how to maintain the plants, and how to use the existing containers in the environment around the house to be utilized as plant pots, such as mineral drink bottles, plastic bags, milk boxes, and so on.

One of the efforts to support the implementation of this activity at the community level was by providing a package of technology for cultivating vegetable plants in pots to 'Ayu Tani' KWT in the form of seeds, tools, and materials needed in the cultivation process so that the theoretical knowledge

that has been conveyed can be implemented in practice by the partners. Thereby, the partners do not only act as passive participants, but are also expected to play an active role in this activity.

Mentoring was provided throughout the process of cultivating vegetable plants in pots until harvest. It was conducted so that partners felt the benefits from this activity and created space for the mentoring team to respond to requests from KWT members who need consultation or knowledge assistance. A number of evaluations were also carried out to determine the extent to which the implementation of this activity was successful. Formative evaluations comprise the initial evaluations (*pre-test*) and final evaluations (*post-test*). The initial evaluation was given before the delivery of the extension session (lecture) and training, while the final evaluation was given at the end of the extension session (lecture) and training. Furthermore, process evaluation (*monitoring*) was carried out simultaneously while extension, training, simulation and mentoring activities were ongoing. The sustainability evaluation was carried out by a team from Lampung University a few months after this activity was completed. This evaluation was carried out by monitoring the sustainability of the cultivation activities of TASAPOT, after the activities of the community services team. Several aspects that were investigated by the team include the administrative implementation, development of cultivating techniques of TASAPOT, and planting vegetables as a source of healthy food for families.

Table 2. The stages of activity implementation and the expected results.

Stages of Activity Implementation	Objectives	Activity Targets	Expected Results
1. Capacity Building and Knowledge of KWT Partners			
Introduction of TASAPOT Technology <ul style="list-style-type: none"> • Meaning of TASAPOT • Advantages and obstacles of applying TASAPOT technology • Techniques with TASAPOT technology • Components and equipment to support the application of TASAPOT technology 	<ul style="list-style-type: none"> • Provide partner with knowledge and understanding about TASAPOT technology 	<ul style="list-style-type: none"> • Training and extension on technology, techniques, requirements, advantages, and obstacles of applying TASAPOT technology 	<ul style="list-style-type: none"> • Partners have the ability and knowledge to understand and master TASAPOT technology • At least 80% of participants master and understand the material well
2. Skills Improvement of KWT Partners			
Practical Application of TASAPOT Technology <ul style="list-style-type: none"> • Equipment set-up • Material preparation • The practice of preparing a series of TASAPOT installations • The practice of applying the techniques of TASAPOT cultivation • Practice maintenance of TASAPOT technology installations and equipment 	<ul style="list-style-type: none"> • Equip partners with skills and abilities to prepare the tools and materials • Equip partners with skills and abilities in vegetable cultivation using TASAPOT technology • Equip partners with skills and abilities to maintain TASAPOT tools and installations 	<ul style="list-style-type: none"> • Guidance and practice of preparing tools, materials, and installation of TASAPOT technology • Guidance and practice of vegetable cultivation using TASAPOT technology • Guidance and maintenance practices for TASAPOT technology installations 	<ul style="list-style-type: none"> • Partners have the ability and skills to prepare installations, tools, and materials, also cultivate and maintain TASAPOT installations • At least 80% of participants master and understand the material well
3. Continual Commitment by KWT Partners to Implement the TASAPOT Technology Package			

Sustainability Commitment <ul style="list-style-type: none"> • Submission of a complete set of TASAPOT installation packages • Strengthening partners' commitment to the application of TASAPOT technology 	<ul style="list-style-type: none"> • Providing motivation and strengthening the commitment of KWT partners in implementing TASAPOT technology 	<ul style="list-style-type: none"> • Guidance and practice on how to read the potential and opportunities in developing the market for the vegetable commodities they produce • Scheduled guidance and monitoring of the continuity of the application of TASAPOT technology 	<ul style="list-style-type: none"> • Increasing partners' confidence in their own ability to apply and develop TASAPOT technology • At least 80% of participants understand and aware about the potential and market opportunities for the derivative commodities they produce
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3. Results and discussion

Bulurejo Village has potential that can be developed. One of which is the utilization of the house yards, which can be optimized for the development of Sustainable Food Houses (*Rumah Pangan Lestari/RPL*) in order to improve the community's standard of living. The utilization activities of yard land for farming can be conducted through the cultivation techniques of vegetable plants in pots (TASAPOT). For this reason, the community services program for farmers in Bulurejo Village is required to achieve a common goal, namely to improve the farmers' standard of living and welfare through the cultivating techniques of TASAPOT to produce vegetable plants in the yard around the house so as to obtain a healthy and sustainable household food source.

The implementation of mentoring activities for cultivating vegetable plants in pots at 'Ayu Tani' KWT of Bulurejo Village in July–September 2022 has been fully implemented (100%), namely socialization regarding the implementation activities of RPL and cultivation techniques of TASAPOT, preparing tools and materials to facilitate activities, knowledge about RPL, and training on the cultivation techniques of TASAPOT. In the early stages, the program conducted was socialization on the implementation of RPL and the cultivation techniques of TASAPOT, preparation of tools and materials, and training activities. Socialization and training activities were carried out together with the target partners of the community, so that the training on cultivation techniques of TASAPOT can be implemented smoothly and the community can directly understand the cultivation process and its planting media.

3.1. Socialization regarding the cultivation techniques of potted vegetable plants (TASAPOT)

The socialization activity regarding the cultivation techniques of potted vegetable plants (TASAPOT) was carried out in July–September 2022, at the house of Mrs. Wagiyem, one of the members of 'Ayu Tani' KWT in Bulurejo Village. The participants were the members of the 'Ayu Tani' KWT and the community of Bulurejo Village. This socialization activity aims to increase public knowledge about RPL and cultivation of TASAPOT.



Figure 1. Socialization and extension on the sustainable food houses (RPL) and the implementation mechanism of mentoring activities regarding the cultivation techniques of TASAPOT.

The socialization activity that was held regarding the RPL and the implementation mechanism of mentoring activities regarding the cultivation techniques of TASAPOT generate a number of outcomes, namely the community and 'Ayu Tani' KWT of Bulurejo Village are expected in the future to have a better understanding regarding the cultivation techniques of TASAPOT, which bring various benefits for health and environmental sustainability, as its implementation is also more costly efficient.

3.2. Cultivation training of potted vegetable plants (TASAPOT)

3.2.1 Cultivation techniques of TASAPOT

Training on cultivation techniques of TASAPOT to 'Ayu Tani' KWT in Bulurejo Village, Gadingrejo District, Pringsewu Regency was held in August 1, 2, 4 and 5, 2022 at the houses of 'Ayu Tani' KWT members (Hamlet I, Hamlet II, Hamlet III, and Hamlet IV). The training provided aims to increase the community's knowledge and understanding regarding the cultivation techniques of TASAPOT, so that they can obtain healthy food to meet their family's food needs and the remaining produce can be sold to the market in order to help improve the community's standard of living. Picture of training activities of cultivation techniques of TASAPOT is presented in Figure 2.

The first training activities conducted were the introductory extension and discussion about the importance of vegetables and the nutritional value of vegetables for the family, how to grow vegetables by utilizing the house yard, then explanation about what media can be used for the cultivation of TASAPOT, and the appropriate types of planting media that can be obtained around the house. The activity after the explanation was a direct practice on how to cultivate vegetables plants in pots. Starting from how to process the soil properly, then mixing the basic ingredients of plant fertilizers, namely manure, soil, and biochar. In addition, the explanation was also given on the importance of using biochar and how to make biochar as a mixture of planting media, and materials that are easily obtained in the environment around the house. The media that has been mixed evenly was then put into the pot and *polybag*. The purpose of using pots is to create a beautiful atmosphere around the house with green leaves as an aesthetic, and are also beneficial for public health because the plants grown are basically edible as they contain vitamins and minerals needed by the human body so that they are beneficial for consumption. The soil that has been put in the pots and *polybags* was then hollowed a little so that the vegetable seeds can be inserted into it, then the soil was watered and the pots were moved to a shady place.



Figure 2. Cultivation techniques of potted vegetable plants (TASAPOT): Assistance and monitoring of plant growth and development.

The community services team provided assistance and monitored the results of potted vegetable cultivation (TASAPOT) at 'Ayu Tani' KWT Bulurejo Village in August 19 and 27, 2022 and September 3–4, 2022. The assistance was carried out to check how well the growth and development of the plants. The thing that was investigated in this assistance was how much the percentage of plants that have grown. Furthermore, an evaluation was carried out for plants that failed to grow and how big the percentage was. Monitoring results show that the use of mixed planting media in the form of soil, manure, and biochar is appropriate for supporting the growth and development of vegetable plants. This can be seen from the growing percentage of these vegetable plants, which almost reached 85%; the remaining 15% of the plants did not grow or died due to the influence of high evaporation, causing the plants to dry out. The results of this mentoring also obtained a number of informations, such as several plants that were attacked by caterpillars, and this is a common problem related to how to eradicate pests and diseases in vegetable plants organically. This is because the partners want to know and learn how to make organic insecticides to ensure that the vegetable plants cultivated around their houses are healthy vegetables, so that they are safe for the family's consumption.

The results of this community services program are expected to be evaluated in order to be continued in the future. The future aim is to assist and provide in-depth training to the community on how to deal with pests and diseases in vegetable plants organically in order to generate healthy food. Overall, the implementation of this program has succeeded in achieving the expected results, namely the community can understand and practice the cultivation techniques of TASAPOT very well and the team has successfully delivered the theoretical and practical knowledges regarding this matter to the community and members of 'Ayu Tani' KWT in Bulurejo Village, Gadingrejo Subdistrict, Pringsewu Regency.

4. Conclusions

The results of community services program regarding the socialization and training of the cultivation techniques of potted vegetable plants (TASAPOT) to 'Ayu Tani' KWT in Bulurejo Village, Gadingrejo Subdistrict, Pringsewu Regency concluded that the implementation of this program has been able to achieved the expected outcomes, namely increased knowledge of the community and members of 'Ayu Tani' KWT Bulurejo Village regarding the importance of Sustainable Food Houses (RPL) and TASAPOT to improve family's health and economy, as well as to improve the community's standard of living. In addition, this activity was able to increase community's understanding regarding the cultivation techniques of TASAPOT, starting from optimizing their house yards, using planting media, planting techniques, and plants maintenance until harvest.

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