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Technical Guidance for Revitalizing Land Yard in the Family Welfare Empowerment Group (PKK) Pasir Mulya Village, Bogor City

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Abstract

Counseling and training on verticulture-based land optimization to revitalize narrow land yards for PKK groups and housewives aim to increase the ability of PKK groups in the field of verticulture-based cultivation technology. It is hoped that after this activity, they will be able to optimize themselves and their land, and there will be an increase in the income and welfare of the PKK group and housewives. The approach method used in this activity is conducting counselling and training. This activity consists of three stages, namely counseling, training in making planting media, and training in how to plant. The results of the activity showed that the participants of this activity stated that their knowledge of the technique of revitalizing narrow land yards through Verticulture was increasing, cheap, applicable and based on local resources.

Keywords: Revitalization, PKK, verticulture, yard

INTRODUCTION

Food security is the condition of meeting food needs for households as reflected in the availability of sufficient food, both in quantity and quality, safe, equitable, and affordable. One of the problems that arise regarding food security is the decreasing number of agricultural land that can be utilized to meet daily food needs (Miftahudin *et al*., 2021). The development of household-scale food security can be started in the yard area belonging to each resident. The yard is the land or yard around the house. The yard can be a source of food and nutrition for the family in meeting the needs of carbohydrates, proteins, vitamins and minerals. People can start using the yard to fulfil their household needs by planting.

In the use of the yard, various planting techniques are used according to the recommendations with various modifications to suit the shape, size, and condition of the yard owned by the community. One of the planting systems that can be applied in the yard is the verticulture system, which is a way of farming vertically by arranging plants in stages from bottom to top. This system is most suitable to be applied to a narrow yard and can be accompanied by a household organic waste processing business that can be used as compost which can fertilize plants (Ariyanti *et al*., 2021) besides that, it can also increase household income (Istanti *et al*., 2022).

Home gardens have enormous potential and can be used as a source of the food supply with nutritional and high economic value. Yard land used optimally can be one of the pillars for realizing family welfare. In the context of utilizing the yard or terrace of each household in both rural and urban areas, the government, through the Ministry of Agriculture 2011, has launched a program called the Sustainable Food House Area (KRPL) (Lesmayati, 2016). Establishing this KRPL is one of the government's commitments to involve households in realizing food self-sufficiency, diversifying food based on local resources, and conserving food crops for the future (Uyun *et al*., 2022). The concept developed is food independence through the use of environmentally friendly yards to meet family food and nutritional needs, as well as increasing income which will ultimately improve community welfare (Rinory and Prihtanti 2022).

The land area of the urban yard owned by each household is very limited. One solution to use land efficiently and optimally is a vertical planting system. Verticulture is a vertical planting system that stacks up from the plant media. Vertical planting aims to optimize land use exceedingly narrow yards. The vertical farming system is straightforward to do and the ingredients are easy to find, so

it can be applied by housewives, which in the end can fulfil household food self-sufficiency. In the vertical planting system, the plants to be planted should be adapted to the needs and have high economic value, short life, and short roots (Harahap and Lubis 2020; Sara *et al*., 2022; *Mada et al*., 2022))

Some of the advantages or advantages of the vertical planting system are: (1) Efficiency in land use; for example, in one meter of paralon measuring 4 inches in diameter, ten plant holes can be planted to plant chilies. Thus, it can increase the harvested area or save 4 m2 of land, (2) Environmentally friendly because the material can be used from used materials such as paralon, used paint cans, sacks, buckets, bamboo, paralon, barrels, etc., (3) Efficiency in water use and fertilizers, column irrigation can prevent or reduce water loss through evaporation and fertilizer loss through leaching of nutrients by rainwater and nutrient loss through evaporation (4) Free from weed disturbances, (5) Hygienic free from the reach of animals such as rats, cats, chickens, etc., (6) Can increase crop diversification, in one tube can be planted with several types of plants, (7) Can be moved easily because plants are placed in specific containers, (8) Easy to maintain plants, (9) can be carried out indoors or outdoors, (10) Is a greening concept suitable for urban areas, and limited land, (11) Saves household living costs (Masnang *et al*., 2019)

This counseling and training activity aims to improve the ability of the PKK group in the field of vertical smart-based cultivation technology, the competence of the PKK group, and optimizing the use of yard land. It is hoped that after this activity they will be able to optimize themselves and their land and there will be an increase in the income and welfare of the PKK group. The target of this activity is to improve agricultural skills in terms of technology and business for the PKK group. After the training, participants must be able to apply the results of the counseling and training independently.

METHOD

This counseling and training activity aims to improve the ability of the PKK group in the field of vertical smart-based cultivation technology, the competence of the PKK group, and optimizing the use of yard land. It is hoped that after this activity, they will be able to optimize themselves and their land and there will be an increase in the income and welfare of the PKK group. The target of this activity is to improve agricultural skills in terms of technology and business for the PKK group. After the training, participants must be able to apply the results of the counseling and training independently.

RESULTS

The activity location is in RW 06, Pasir Mulya sub-district, West Bogor sub-district, and Bogor Municipality. RW 06 consists of 6 RT. Based on observations of members of the PKK group who participated in this service activity, data was obtained that the age range was between the ages of 35 to 70 years (Table 1). Education is in the field of high school graduation to undergraduate. The average land area owned by residents is 3 to 10 m^2.

Table 1. Data of trainees

No.	Name	RT	Gender	Occupation	Age Range
1.	Tuti Syahadat	RT04	Perempuan	IRT	50
2.	Erna Ilyas	RT04	Perempuan	Dokter	70
3.	Ibu Nurdin	RT03	Perempuan	IRT	70
4.	Septiana	RT02	Perempuan	IRT	35
5.	Yetti Ramli	RT03	Perempuan	IRT	70
6.	Lilis Lesmana	RT03	Perempuan	IRT	50
7.	Melly	RT03	Perempuan	IRT	45
8.	Yeyet	RT01	Perempuan	IRT	50
9.	Rachma N	RT04	Perempuan	IRT	45
10.	Een Endah	RT01	Perempuan	IRT	55
11.	Euis	RT01	Perempuan	IRT	70
12	Ibu Hadi	RT01	Perempuan	IRT	60

No.	Name	RT	Gender	Occupation	Age Range
13	Ibu Kahar	RT03	Perempuan	IRT	60
14.	Tuti Talanai	RT04	Perempuan	IRT	50
15.	Tina Hadi	RT04	Perempuan	IRT	45
16.	Heni Erwin	RT02	Perempuan	IRT	55

DISCUSSION

The initial stage of this activity began to be designed as a routine community service activity carried out by the LPPM team from the University of Nusa Bangsa (see Figure 1). This activity was carried out because the PKK group or housewives tended to be reluctant to plant food crops in their yards because the land was very narrow. Based on this observation, the team is trying to collaborate on vertical planting technology where the PKK group wants to take verticulture actions accompanied by increased plant productivity. So it is hoped that the PKK group can independently meet the needs of some food crops that are often needed daily, such as chilies, tomatoes and other vegetables. Guidance and counseling were carried out to the PKK group starting from the counseling stage regarding the benefits and importance of vertical planting (see Figure 2).

The PKK group received various knowledge of verticulture techniques and the importance of maintaining food crops. The following material is technical guidance for making verticulture using paralon or bamboo pipes where the materials and tools are adapted to the conditions of the PKK group. From the evaluation results, it was found that all PKK groups participating in counseling did not yet know verticulture technology. Here the PKK group can see and ask about how to make vertical equipment for the Team and can directly try to make tools (see Figure 3). Furthermore, special guidance was given to make planting media (Figure 4a), and how to plant and maintain plants grown vertically (see Figure 4b).

This activity was attended by PKK groups and PKK women's groups in RW 06. The results of the counseling and practice showed the enthusiasm of the PKK and PKK women's groups to apply the material they had received. According to participants from the PKK group, this technology is simple and easy to do. It is hoped that with this service, more PKK groups will apply this technology. It will increase the quality of the environment and increase the income of the PKK group. The evaluation results after the training showed that all participants in the PKK group increased their knowledge of vertical technology and were willing to apply it to their yards. Based on the testimonies given by several participants, it shows that the interest of the community or the PKK group in RW 06, Pasir Mulya sub-district is very enthusiastic and appreciates this activity.

Participants' responses after attending the training showed that all PKK group participants increased their knowledge of verticulture technology and were very interested in applying it to their yards. This increases the interest of the participants to continue to acquire additional planting skills in the yard. They are very enthusiastic about continue communicating with the extension team by creating a communication forum through the whatsApp group.

Based on the testimonies given by several participants through the WhatsApp group, it shows that the public interest or the PKK group in RW 06, Pasir Mulya sub-district is very enthusiastic and appreciates this activity. Some of the testimonials are as follows:

[24/10 13:28] Rt. Tuti: Welcome to join ..... Mrs Andi Masnang.

[24/10 13:30] PkkEenEndah: Mrs. @Andi Masnang I have many friends who want to learn the smart verticulture system. How do you do that?

[24/10 16:06] Andi Masnang: Thank you Mrs Tuti for the add

[24/10 16:07] PkkKussumarni: welcome to join Ms. Andi, I am Ms. Riyanto

[24/10 17:14] Pkkceriawiwik: Sorry I'm late, thank you to Andi Masnang, along with the team from Nusa Bangsa University, who have shared their knowledge with PKK RW 06 women. Hopefully, it will be helpful and inspire women to grow healthy vegetables in a narrow area.

[24/10 17:19] PkkEdis: Even though I don't participate, I say thank you to Mrs Masnang and the team from UNB. I hope you don't get bored and there will be more participants in the future.

[24/10 17:49] Pkkceriawiwik: What has been practiced is to make 3 verticulture units, and then the practice results will be drawn as a door price for the women who attend. And the lucky ones are: Mrs. Een RT 1, Mrs. Wiwiek Fadjar RT 1, and Mrs. Tuti Telanai RT 4. Alhamdulillah 🙏
[24/10 17:56] PkkEdis: 👍 👍 👍 👍
[24/10 18:09] Rt ellinSopari: 👍 👍 👍 👍
[24/10 19:04] Andi Masnang: Thank you Ms PKK Ceria for the appreciation. We from the University of Nusa Bangsa (UNB) are always ready at any time to share knowledge and experiences to improve community empowerment.
[24/10 20:11] +62 812-1047-356: Thank God, thank you, Andi
[25/10 07:55] PkkDidah: Greetings.....it's a shame you didn't attend, Mrs. Andi, next time I want to be private, okay?
[25/10 08:18] Andi Masnang: Yes ma'am please

CONCLUSIONS AND RECOMMENDATIONS

All participants in this activity stated that technical and economic knowledge related to PKK Group Development in Optimizing Verticulture-Based Land Use for Revitalizing Small Land Yards through Verticulture is increasing. Revitalization of narrow yards through vertical cultivation of plants is very easy, inexpensive, applicable and based on local resources because the method is easy, the materials are cheap and based on local resources. Applicative because it can be adjusted to the type of plant. Regarding the response of the PKK groups participating in this activity, it is recommended that this community service activity be more intensified and spread throughout the region in the Municipality and Regency of Bogor. So that food self-sufficiency is achieved at the household level.

Planting vertically is a solution to grow crops in a narrow yard that can get added value if you use recycled materials. Besides being cheap, it also helps in cleaning the environment.

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APPENDIX

Figure 1. The extension team and participants

Figure 2. The implementation of counseling on the verticulture method

Figure 3. The process of making vertical equipment

(a) (b)

Figure 4. The planting media preparation (a) and planting (b)

Figure 5. The shape appearance and several types of plants that can be grown vertically