COMMUNITY ASSISTANCE FOR VERTICULTURE DEVELOPMENT AND APPLICATION WITH URBAN FARMING ON NARROW LAND IN URBAN

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ABSTRACT

Rawamangun Village which is the target area for community service activities are RW 01, 02, 03, and 05. From the aspect of open space, RW 02 has four sports fields, both standing on state land, and those using vacant public land. This sports field is located in the middle of a residential area, and is united with a public open space. The condition of the open space is used as a parking area, a place to sell, built a non-permanent shop, and also as a place for children to play. It is different with RW 01, 03 and RW 05, which do not have a field or open space for their citizens to do activities. In addition, there is still a lack of public knowledge about the concept of environmentally friendly settlements. Solutions that can solve the problems of the Rawamangun sub-district community include providing knowledge about green open space in the form of verticulture with urban farming and making verticulture with urban farming which is applied to narrow land in the form of verticulture in the Rawamangun sub-district environment. The method used is the TRI-DAYA concept approach, namely social power by inviting the community through community assistance activities, environmental power by identifying people's ignorance of the green environment, and economic power with the production of vertical farming with urban farming that can be used alone or sold. to the general public. The output target of this activity is to increase public knowledge about green open space and its application in the form of verticulture with urban farming that can be made by the local community.

Keywords: community assistance, reforestation, narrow land, veticulture, urban farming

1. INTRODUCTION

Rawamangun Village is located in Pulo Gadung District. This village is bordered by Kayu Putih Village to the north, Jati Village to the east, Pisangan Village to the south and Cempaka Putih Subdistrict to the west. The RWs covered by CAP's activities are RW 01, 02, 03, and 05 which are located close to each other. The four RWs are passed by rivers or rivers whose upstream comes from Cipinang River and Sunter River [1]. Rawamangun Village which is the target area for community service activities is RW 01, 02, 03, and 05. Based on the data, the total population is 13,511, namely the male population is 6443 people and the female population is 7,067 people. Most of the RW residents who are the area of this activity are laborers and casual workers, traders, as well as private and state employees.

Analysis of the open space aspect, RW 02 has four sports fields, both standing on state land, and those that use vacant public land. It's still in pretty good condition. This sports field is located in the middle of a residential area, and is united with a public open space. The condition of the open space is used as a parking area, a place to sell, built a non-permanent shop, and also as a place for children to play. It is different with RW 01, 03 and RW 05, they do not have a field or open space for their citizens to do activities. They really hope that the local government will build a field/open space for its citizens. The following is the sports field in RW 02.

One of the urban areas in the East Jakarta Administrative City, namely Rawamangun Village, Pulogadung District, East Jakarta Administrative City which also does not escape the rapid growth and development of slum settlements built by urbanites. Efforts to minimize slum settlements in the middle of the city have been carried out by the East Jakarta City Government with the implementation of various activities such as repairing environmental roads, repairing drainage/channels, reforestation, waste and building flats for programmed residents, but the results have not been able to fully reduce the slums in the Kelurahan. Rawamangun, Pulogadung District.

This can be seen from the results of the 2013 RW Slums Directory Evaluation released by the Central Statistics Agency (BPS) of DKI Jakarta Province, where Rawamangun Village has four RWs which are included in slum RWs, namely RW 01, 02, 03 and RW 05. The 11 indicators of BPS Slum RW in 2017, include population density, building density, residential building construction, ventilation and lighting conditions for residential buildings, defecation areas, ways of disposing of waste, transportation of garbage, state of drainage/water channels, environmental road conditions, public street lighting and building layout.

Based on the description above, it can be focused on the problem of reforestation as the lungs of the city, namely the lack of public knowledge about the concept of environmentally friendly settlements, which can be realized by providing reforestation on narrow land in the form of vertical gardens with urban farming or commonly referred to as

vertical, it is necessary the existence of a socialization and assistance that can open a window of public insight so that they can apply the provision of reforestation on narrow land.

2. METHOD

To go directly to the community in an effort to implement community assistance activities in the development and application of verticulture with urban farming in Rawamangun Village, East Jakarta, an approach process with the TRI-DAYA concept is needed. The Tri-Power concept consists of:

a. Social Power

The concept of Social Power is to invite the community through community assistance activities in the development and application of verticulture with urban farming on narrow land in Rawamangun Village, East Jakarta in providing greenery to the environment.

The concept of empowerment towards a community that cares about waste through:

1) Knowledge of green open space and the benefits of reforestation for the environment.
2) Knowledge of community assistance in the development and application of verticulture with urban farming.

b. Environmental Power

The concept of Environmental Power is to identify:

1) The public's indifference to the green environment.
2) The ability of the community environment in growing plants.
3) The ability of the community environment in providing planting media.

c. Economic Power

The concept of Economic Power is that the production of vertical farming with urban farming can be used alone or sold to the general public, which in turn can increase the economic value of the surrounding community. By utilizing verticulture with urban farming as reforestation properly and appropriately, it can cool the ambient air temperature and the results of urban farming that can be harvested and utilized by the community.

3. RESULT AND DISCUSSION

The results of Community Service activities by the Architecture Study Program, Faculty of Engineering, Budi Luhur University are in the form of socialization, training, and monitoring in realizing reforestation on narrow land through verticulture with urban farming for reforestation in the community of Rawamangun Village, East Jakarta.

Location survey, licensing, and socialization activities

The activity begins with a site survey, asking for permission from the local village apparatus, and socializing the implementation of activities to RW residents. 01 Rawamangun Village, East Jakarta.

From the results of this site survey, an agreement was obtained on the day of the training activities and the target community members to be included. And it was agreed that the implementation of the activities would be on Wednesday, January 29, 2020.

Preparation activities for making verticulture with urban farming

Preparatory activities for reforestation on narrow land with urban farming verticulture at Balai Warga RW. 01 is divided into 3 sessions, namely:

a. Vegetable plant nursery (urban farming)

Prior to the implementation of activities at the community hall, vegetable plant nurseries are carried out first. The vegetable plants that are seeded include red spinach, green spinach, celery, lettuce, mustard greens and kale. The selected plants are vegetables with the aim that these plants can be useful and harvested by local residents. Plant nurseries are carried out for 2 to 3 weeks before the activity is carried out so that the plant seeds are ready to be planted.

Figure 1. In the nursery container, newspaper is given in each hole

Figure 2. Giving planting media

Figure 3. Planting media alignment

Figure 4. Planting seeds

Figure 5. Development of plant seeds

b. Making verticulture with urban farming from paralon pipes

1) Vertical farming with paralon pipe model 1 . urban farming

Verticulture for urban farming in this activity uses paralon pipes. One paralon pipe rod is cut in half, with a length of 200 cm, then the pipe is sliced on the right and left sides of the pipe in a zigzag way. Then the pipe slices are heated with an acrylic heater and perforated with bottles to make holes in the paralon pipe. The following is the process of vertical paralon pipe model 1:

Figure 6. Making marking or marking on paralon pipes


Figure 7. Pipe cutting according to the mark


Figure 8. Heating the cut part using an acrylic heater

Figure 9. Making a hole using a glass bottle in the heated part

Figure 10. Pipe support casting

Figure 11. Pipe pedestal drain


Figure 12. Making ventilation holes for water at the bottom of the pipe

2) Verticulture with urban farming Paralon pipe model 2

Making verticulture with urban farming model 2 by cutting a paralon pipe with a length of 100 cm, then the pipe is made a hole in the middle of the pipe. Then the right and left sides of the pipe are closed and a valve is given to insert the hanging wire. The following is a vertical process with urban farming that uses a paralon pipe model 2:

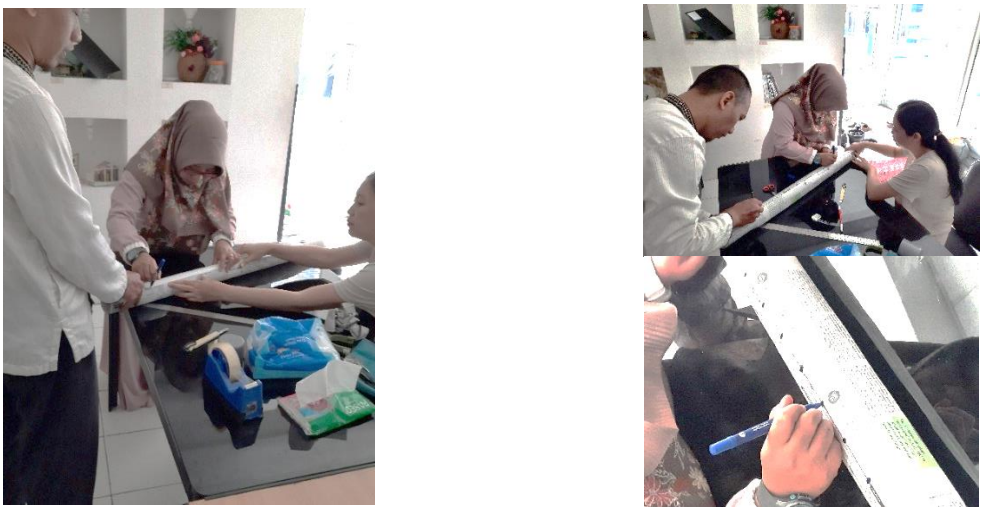

Figure 13. Making Marking or marking on paralon pipes

Figure 14. Perforation at the bottom of the pipe for water ventilation

Figure 15. Installation of the right and left side pipe covers

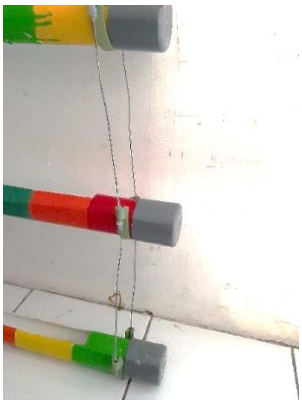

Figure 16. Pipe valve installation

Figure 17. Hanging wire installation

3) Making verticals from used plastic bottles

Vertical garden materials are not only made from paralon pipes, other materials that can be used to make vertical gardens and are easy to obtain are used plastic bottles. Reusing used plastic bottles (reuse) into something useful can help reduce plastic bottle waste or non-organic waste. How to make a vertical garden with used plastic bottles as follows:

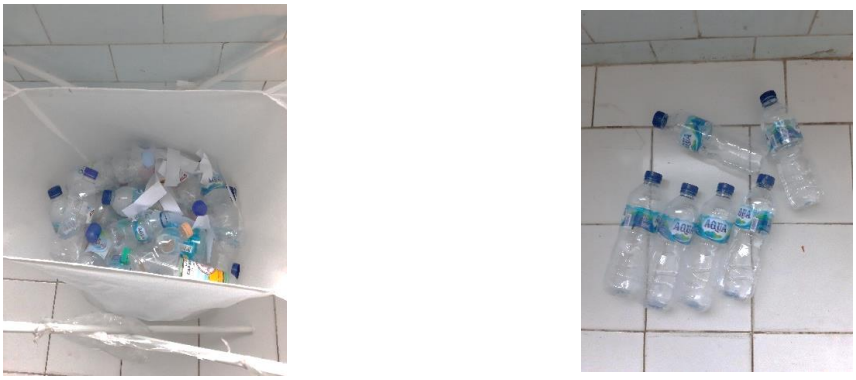

Figure 18. Sorting and cleaning plastic bottles to be used

Figure 19. Making a mark

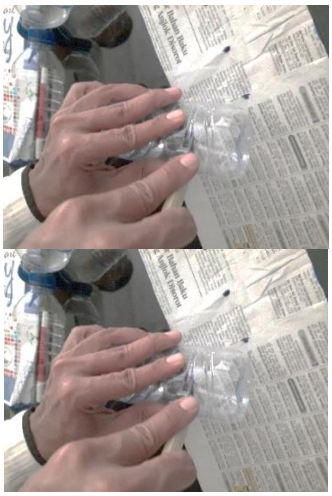

Figure 20. Cutting according to the marking that has been made

Figure 21. Painting

Figure 22. Hanging rope installation

Delivery of materials for making verticals with urban farming

The activity begins with the provision of material on green open spaces. This material is an opening material, as well as an introduction to green open space, its benefits and also the application of green open space on narrow land in urban areas, namely by applying verticulture with urban farming. After the material on green open space, it was continued with material on verticulture with urban farming and its application.

Figure 23. Kata sambutan dari perwakilan kelurahan rawamangun

Figure 24. Penyampaian materi tentang ruang terbuka hijau, vertikultur dan *urban farming*

Figure 25. Suasana dan antusias warga

Figure 26. Pemberian cindera mata

Figure 27. Foto bersama dengan aparat desa

Workshop or practice of making verticulture with urban farming

After following the presentation of the material on green open space on narrow land and verticulture with urban farming for reforestation, followed by the practice of making verticulture. Verticulture with urban farming can be made using used plastic bottles that are cut in such a way and painted to make it more aesthetically pleasing, some

plastic bottle pots are arranged vertically using a rope as a hanger. After the used plastic bottle pots have been made, the next step is planting urban farming plants into the plastic bottle pots that have been made.

Monitoring the application of verticulture with urban farming to target residents

Activity monitoring is intended for the continuation of the activities that have been carried out. Monitoring can be a parameter of the success of the program, by monitoring activities it can be seen whether the target community applies the knowledge about verticulture with urban farming that has been given or not. Monitoring of this activity is carried out 1 week to 2 weeks after the activity is carried out in the target community. Monitoring activities by going directly to the target community and requesting a report from the local community leader or the authorities in the target community.

Figure 28. Explanation of how to make vertical urban farming

Figure 30. Making and planting vertical urban farming

Figure 32. Briefing on vertical urban farming

Figure 33. Take pictures with the community

4. CONCLUSION

Based on the results of community assistance activities in the development and application of verticulture with urban farming on narrow land, it can be concluded that verticulture with urban farming is a solution to create reforestation in narrow areas, making verticulture with urban farming can use plastic waste, in this case plastic bottles as material. used or reused. In addition to used plastic bottles, the manufacture of vertical with urban farming can also be made using paralon pipe material. With urban farming verticulture can produce vegetables that can be consumed alone or sold to improve the economy of the local community.

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