

Development of an Ornamental Village through the Utilisation of Non-Organic Waste Plastic Bottles into Vertical Garden Flower Pots and Garden Differentiation in Banjargondang Village Lamongan

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Abstract: *co The purpose of this community service activity is to develop a Decorative Village through the Utilization of Non-Organic Waste Plastic Bottles into Vertical Garden Flower Pots and Differentiation in Banjargondang Village Lamongan. The method of implementing activities is carried out through 5 stages, namely observation, planning, making flower pots, planting flowers into pots, and implementing the installation of flower pots in the banjargondang village area. The results of this activity are First, the realization of the ornamental village concept in banjargondang village which makes the village more beautiful, beautiful, green and organized with the arrangement of several flowers at several points in the area. Second, making the village cleaner, the utilization of plastic bottle waste can reduce the amount of plastic waste in the Banjargondang community. Third, increasing public awareness about proper waste management, the management of plastic waste into flower pots has inspired the community to be creative in utilizing plastic waste in the surrounding environment, so that waste will be reduced and well managed.*

Introduction

Banjargondang Village, Lamongan, is one of the villages that has very rich and beautiful natural potential. However, like most other villages in Indonesia, Banjargondang Village also faces serious problems related to waste, especially non-organic waste such as plastic bottles which are often the cause of environmental pollution (Hayat and Zayadi, 2018).

Utilisation of non-organic waste is one of the creative solutions to overcome the waste problem in Banjargondang Village (Krisnani et al., 2017). In this context, the development of the Decorative Village concept that focuses on the use of plastic bottles as vertical garden flower pots is an interesting idea and has great potential to change the face of the village to be more beautiful and environmentally friendly (Agriflo, 2016).

This community service focuses on the development of an ornamental village through optimising the use of non-organic waste, especially plastic bottles, into vertical garden flower pots. In addition, it will also explain about garden differentiation in Banjargondang Village, which includes various types of gardens and different green open space arrangements to enhance the beauty and diversity of the village environment.

This approach is expected to provide multiple benefits for Banjargondang Village. First, it reduces the amount of plastic waste that ends up in the environment, thereby reducing negative impacts on ecosystems and public health (Suminto, 2017). Second, it changes the face of the village to be more beautiful and attractive, improving the quality of life of residents, and having a positive impact on the village's tourism sector (Retnoningsih, 2013).

The implementation of the Desa Hias concept starts from the collection and processing of plastic waste, techniques for making vertical garden flower pots from used plastic bottles, to the arrangement of parks and green open spaces with various types and different themes.

It is hoped that this service can provide inspiration for the community, local government, and various related parties to adopt and develop similar ideas in an effort to protect the environment and bring beauty and comfort to other villages in Indonesia. In addition, it is also expected to raise awareness about the importance of sustainable waste management and creative use of waste to create added value for the environment and society.

Method

Community service with the theme Development of an Ornamental Village through the Utilisation of Non-Organic Waste Plastic Bottles into Vertical Garden Flower Pots and Garden Differentiation in Banjargondang Village Lamongan was carried out from 01 August to 10 August 2023. The implementation method was carried out in several stages, namely: observation, planning, making flower pots, planting flowers into pots, and implementing the installation of flower pots in the banjargondang village area.

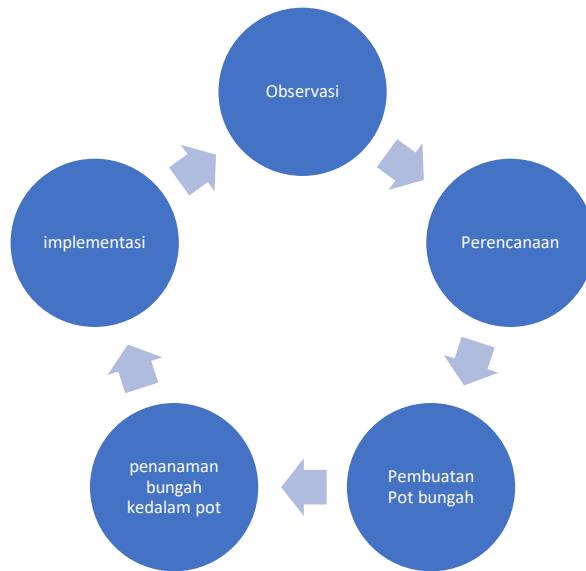


Figure 1. Stages of the Implementation Method

Result

Community service activities with the theme Decorative Village Development through the Utilisation of Non-Organic Waste Plastic Bottles into Vertical Garden Flower Pots and Garden Differentiation in Banjargondang Lamongan Village were carried out from 01 August to 10 August 2023. This activity is an effort to increase public awareness, especially the younger generation, about the importance of plastic bottle waste management. In addition, it is also expected to generate creative ideas in the use of plastic bottles into more useful products, one of which is as a pot or container for plant cultivation by utilising narrow land.

1. Observation Stage

The initial stage carried out before carrying out this activity is to observe the situation in the environment around the village of Banjargondang. The results of the observation show that there is a lot of plastic waste that is not managed properly, causing environmental impacts, namely the accumulation of plastic waste in several areas of the village. In addition to causing environmental impacts, plastic waste is also a potential that can be utilised in the development of an ornamental village by utilising plastic waste or bottles.

2. Planning Stage

From the results of these observations, the team carried out planning to manage and utilise plastic waste as flower pots in order to develop an ornamental village. Plastic bottles will be used as flower pots or planting media. The most

appropriate and simple cultivation system to apply, as well as to increase public awareness, especially young people to care for the environment by means of an ornamental plant cultivation system by utilising used bottles as pots. This planning stage focuses on several points, namely determining the number of points that will be used as a place to stick flower pots, determining the number of plastic bottles and flowers needed, determining the time of work, and implementing the results of bottle processing in the field or points of attachment of plastic bottle pots, as well as coordinating with the surrounding community to be involved in the development of an ornamental village by utilising plastic bottles as ornamental plant pots.

3. Flower Pot Making Stage

The first activity carried out at this stage is to collect tools and materials that will be used for the hydroponic system. The main materials needed were used plastic bottles obtained from the neighbourhood of Banjargondang village. In addition, the other materials are ornamental plants and compost for planting media for flowers, as well as ropes or slaps to tie or hang the pots.



Figure 2. Making Flower Pot from Plastic Bottle Waste

After all the materials are available or ready, the next stage is the process of making flower pots, which is done by cutting plastic bottles according to the size and design of the planned pot, then staining plastic bottles to beautify plastic bottle pots, staining is done by applying several colours, namely blue, pink and purple and grey. Furthermore, giving a rope / tie to the plastic bottle so that it can be hung or arranged according to the planned design, which is vertical.



Figure 3. Painting the Flower Pot from Plastic Bottle Waste

4. Stage Planting Flowers into Pots

At this stage, the activities carried out are planting ornamental plants in used bottles that have been painted and perforated in the middle to insert planting media in the form of clay and compost. After planting, it is also necessary to carry out maintenance which includes watering, supplementary fertilisation and weeding. The intervals and other maintenance requirements are different for each type of plant.



Figure 4. Planting Flowers into Pots

In accordance with one of the objectives of the vertical garden is to overcome the limitations of land, besides that vertical garden plants become a means of green space that has functions and uses such as the environment has aesthetics. It can also be seen that the making of vertical gardens has benefits including the act of scribbling to be reduced, beautifying the environment and of course very useful for the younger generation to instil a sense of environmental

care from an early age.

5. Implementation Stage

The stage of implementation or placement of plants that have been planted and arranged in bottles that have been tied using a slap rope and preparing nails for the installation media. The placement of these ornamental plants is placed at several predetermined points of Banjargondang village.



Figure 5. Implementation of Flower Pots in Several Locations in Banjargondang Village

The installation of flower pots from plastic bottle waste makes some areas look more beautiful and beautiful than before so that the concept of an ornamental village can be realised through the use of plastic bottle waste. On the other hand, the use of plastic bottles is also a solution to managing and utilising excess plastic bottle waste so that it has more benefits, and is also expected to be an inspiration for the community to manage waste much better in the future, especially for young people who care about the environment.

Discussion

The development of an ornamental village is an effort to arrange or design a village by utilising certain decorations, especially using a number of ornamental plants that are put into pots, then the plants in the pots are arranged in an orderly and aesthetic manner which are then installed or placed at several points in the village area, so that there is a great hope that the village will become more orderly, green and look beautiful with some of the flower decorations. An ornamental village is a concept of

developing the potential of an existing village to become an attractive village, full of inspiration and providing benefits to the surrounding community.

Outdoor ornamental plants with plastic bottle pot media have a very important role in adding to the beauty of the village. With a beautiful garden decorated with various types of ornamental plants, the village will be more attractive and comfortable to live in. In addition, ornamental plants also have benefits in improving air quality, reducing pollution, and maintaining the balance of the ecosystem, and the development of an ornamental village through the use of plastic bottles as decorative flower pots is a good step and provides benefits to the community both in improving the beauty of the village and reducing plastic waste. According to Ariani, the use of plastic bottles containing plants has an impact on a healthy and comfortable environment because there are many green plants in the surrounding environment (Ariani, 2018).

The utilization of plastic bottle waste into decorative flower pots is an effective way to reduce the problem of large amounts of plastic waste, especially beverage bottles in Banjargondang village. This was also expressed by Moh. Imron Mas'ud that the utilization of plastic bottles into flower pots is a gradual solution by utilizing plastic bottle waste into flower pots Gradual solutions and in this way the amount of plastic bottle waste can be reduced and the increasing value of plastic bottles that can be used as a medium for growing plants and flowers at low cost (Mas'ud, 2023).

Furthermore, siti Rohana nasution also said that used goods, especially plastic waste, can open up new jobs. This is evidenced by the coffee wrapper can be made into an attractive and unique bag of course. The manufacturing process does not require a lot of large capital because it only utilizes used goods (Nasution, 2018). Based on these two opinions, it can be concluded that the utilization of plastic bottles into flower pots is the right and effective step to reduce the problem of the amount of plastic waste in Banjargondang Village. Secondly, plastic waste is also a potential that can open up jobs if managed properly, be it for handicrafts or other crafts that have economic value.

Conclusion

Waste is a major problem in Indonesia that has not been resolved completely to this day. Waste that is not managed properly causes many problems ranging from environmental pollution, flooding, garbage piling up in landfills and causing deadly pollution when the garbage is burned. The utilisation of plastic bottle waste into flower pots is one solution to reduce plastic bottle waste on a small scale, the use of plastic bottle waste can be done by every member of the community to contribute to reducing plastic waste in the surrounding environment.

The development of an ornamental village through the utilisation of non-organic

waste from plastic bottles into vertical garden flower pots and garden differentiation in Banjargondang Village, Lamongan has several positive impacts, including: first, making banjar gondang village a more beautiful, beautiful, green and orderly village with the arrangement of several flowers at several points in the area. Second, making the village cleaner, the use of plastic bottle waste can actually reduce the amount of plastic waste in the Banjargondang community. Third, increasing public awareness about proper waste management, the management of plastic waste into flower pots has inspired the community to be creative in utilising plastic waste in the surrounding environment, so that the waste will be reduced and well managed.

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