

Original Research Paper

## Training On Management of 3 R (*Reuse, Reduce and Recycle*) Coconut Waste (*Cocos Nucifera L*) as Planting Pots Media for Mothers in Tiwu Galih Village

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**Abstract:** Coconut (*Cocos Nucifera. L.*) is a tropical plant that is very popular with the people of Indonesia. One part of the coconut that is used is the coir. Based on data from e-smartschool, coconut husk is a fairly large part of the coconut fruit, which is 35% of the total weight of the fruit. This coir can be developed into various products, one of which is plant pot media or kokedama which have economic value. Its function as a growing medium for plants. Utilization of coir waste is one of the products to minimize waste, namely 3R. The first Reduce principle is an activity that can reduce and prevent the accumulation of waste. The second Reuse principle is the activity of reusing waste that is fit for use for the same function or other functions. The third Recycle principle is the activity of processing waste into new products. In this case Recycle is the principle that makes a new product, through coconut coir waste will be made into a planting medium in pots. Unused coir waste will have economic value and this is one part of the Desapreneur program which aims to minimize coconut coir waste in the Bogak environment, Tiwu Galih Village. The implementation method is carried out using qualitative methods with implementation in the form of initial surveys and product manufacturing practice training. The results from the service show that the community becomes very enthusiastic in making coconut fiber in the form of kokedama products or plant pot media from coconut fiber to succeed in reducing waste from coconut. it is hoped that the community will continue to process coconut coir according to the purpose of service so that in the future it can become a livelihood and a tourist village with this Kokedema product.

**Keywords:** Coconut Fiber; Community Service Program; Desapreneur; Kokedama.

## Introduction

Tiwu Galih Village is a part of Praya Subdistrict which was inaugurated by the Governor of West Nusa Tenggara on 7 July 1997. Tiwu Galih Village has an area of 224.90 Ha. Tiwu Galih Village has a strategic location close to the city center and close to the market. In addition to being a place for buying and selling, the Tiwu Galih market is very potential, but also a place for waste disposal, both organic and inorganic waste. The waste problem is one of the environmental problems that has not been well resolved. In 2014, Indonesia was ranked second as the largest plastic waste producer in the world after China. The Ministry of Environment and Forestry stated that the increase in landfill waste in Indonesia has reached 175,000 tons/day or the equivalent of 64 million tons/year. This means that there is an increase in waste production every year and requires good management. Based on the results of a study in 2012, related to the pattern of waste management in Indonesia as follows: transported and stored in landfill (69%), buried (10%), composted and recycled (7%), burned (5%), and the rest is not managed (7%). Currently, more than 90% of regencies/cities in Indonesia still use the *open dumping* or even burn it. Garbage that accumulates without proper management can cause problems, such as disease.

The principle of waste management that really needs to be done to minimize its bad impact is the 3R. The first principle of *Reduce* is an activity that can reduce and prevent waste generation. The second principle of *Reuse* is the activity of reusing waste that is fit for use for the same or another function. The third principle of *Recycle* is the activity of processing waste into new products. One of the businesses in the Tiwu Galih market is a coconut cutting business. Processing of coconut fruit, especially its derivative products, still has considerable opportunities. Currently, the processing of coconut fruit in the Tiwu Galih sub-district is still focused on processing fruit flesh as the main product, while those processing *by-product* such as coir and coconut shells are still processed traditionally and have not been used optimally by the people of Tiwu Galih village.

Coconut (*Cocos Nucifera*. L.) is a tropical plant that has been Indonesian society. This can be seen from the spread of coconut plants in almost all

parts of the world archipelago region. Indonesia's coconut fruit production averages 15.5 billion grains/year or equivalent to 3.02 million tons of copra, 3.75 million tons of water, 0.75 million tons of shell charcoal, 1.8 million tons of fiber and 3.3 million tons of fiber dust (Agustian et al. 2003 in Sundari, 2013).

The development of the rural economy is often considered slow compared to urban economic development. Rural economic restructuring needs to be done immediately by utilizing rural resources optimally in a way that is in accordance with the conditions and needs of the community in achieving overall and sustainable prosperity. To achieve this, two approaches are needed, namely: (a) Community needs in making efforts to change and prevent things that are not desirable; and (b) *Political will* and capacity of the rural government together with the community in implementing the development plans that have been prepared (Rustiadi in Bachrein, 2010).

So far, the potential of village resources has not been utilized optimally. Even if there are those who use them, they tend to be exploitative and do not consider the impacts caused by the exploitation of village resources. One important solution that is able to encourage the movement of the village economy is to develop entrepreneurship for rural communities. Entrepreneurial village development offers solutions to reduce poverty, migration of people, and development of employment opportunities in villages. Entrepreneurship is a strategy in the development and growth of community welfare, where resources and facilities are provided spontaneously by the village community (community) to lead to changes in rural socio-economic conditions (Ansari, 2013). If the entrepreneurial village becomes a massive movement, it is very possible to encourage rural economic development.

Based on data from *e-smartschool*, coconut coir is a fairly large part of the coconut fruit, which is 35% of the total weight of the fruit. Coconut coir consists of fibers and cork that connect one fiber to another. Fiber is a valuable part of coir. Each coconut contains 525 grams of fiber (75% of coir), and 175 grams of cork (25% of coir). With an average Indonesian coconut production of 15.5 billion grains/year, equivalent to 1.8 million tons of coir fiber, and 3.3 million tons of coir dust (Agustian, et al., 2003; Allorerung & Lay, 1998;

Anonymous, 2000; Nur, et al., 2003; APCC, 2003) then quite a lot of material is available. However, the availability of this material has not been used optimally to build factories or industries for processing coconut by-products, especially coir.

This coir can be developed into a variety of products, one of which is plant pot media or kokedama which have economic value. Its function is as a growing medium for plants. Pots made of coconut fiber absorb water so that the water is more evenly distributed around the plant and allows the roots to grow in all directions, so the plants can become healthier. Kokedama can be applied to various types of herbaceous plants, annuals or perennials, grasses, ferns, and even tubers. However, generally kokedama is applied to plants that are small in size and are usually placed indoors to make them easier to care for and will not grow large quickly.

## Methods

### *Time and Place*

Implementation of making plant pot media or Kokedama from coconut fiber starts from January to February 2022, taking place in the Bogak neighborhood, Tiwu Galih Village, Praya District, Central Lombok Regency, West Nusa Tenggara Province.

The method used in this training is the method of socialization and practice. Prior to socialization, visit to the head of the village head as the head of the PKK and the head of the neighborhood for surveys and determining the schedule of activities. Then socialization as well as assistance is carried out in the following week. During the socialization and mentoring, PKK mothers and youth in the Tiwu Galih sub-district were introduced to the difference between organic waste and inorganic waste. Then the benefits of coconut husk which can be of economic value by making crafts or plant media pots are then shown a tutorial on making plant media pots. During practice, PKK mothers and youth were divided into several groups, and each group consisted of 3-4 people. Each group is free to make pot shape creations according to the wishes of each group.

### *Tools and Material*

- a. Coconut Coir Waste
- b. Scissors
- c. Wire
- d. Rope

### *Steps*

- a. First, the coconut husk is removed from its place.
- b. Shape the wire like a pot. The form is free as desired.
- c. Put the coconut husk waste in the wire that has been formed.
- d. Add additional rope so the kokedama plant can be hung.
- e. Media pots made of coconut fiber are ready to be used.

### *Form of Activity*

The overall form of activity in utilizing coconut coir waste into products of economic value is media for plant pots in Tiwu Galih Village, namely:

1. Program Preparation
2. Village Potential Survey
3. Trial of Making Products from Coconut Coir Waste
4. Product Production.
5. Product Manufacturing Training.
6. Coordination of the Sustainability of Kokedama.
7. Establishment of a Joint Business Group with Kokedama.



**Figure 1.** Pots of Coconut Coir

## Results and Discussion

The concept of 3R waste management is a new paradigm in giving the highest priority to waste management which is oriented towards preventing waste generation, minimizing waste by encouraging items that can be reused, and items that can be reused. can be decomposed biologically (*biodegradable*). Coconut coir has many benefits such as being a source of organic material for planting media, better able to maintain soil temperature and moisture, Save water in use for plants, Environmentally friendly, 100% recyclable and simplify the process of moving plants, Cheaper, economical and efficient .

The training activities to make pots from coconut coir went well and smoothly. Considering that the Tiwu Galih Village is divided into seven neighborhoods, this training was also carried out in the Lurah Office Hall, which is the center of the village. The number of mothers and teenagers who came to this training was 15 people, who were represented from every neighborhood in the Tiwu Galih sub-district. Participants seemed enthusiastic in this activity because they had never been introduced to making pots from coconut fiber before. This activity can be said to be successful because the purpose of this training was achieved, namely introducing an alternative technique to make pots easily.



**Figure 2.** Practical Training on Making Plant Pots from Coconut Coir.



**Figure 3.** The results of the practice of making media pots from coconut coir with the women of Tiwu Galih Village.

## Conclusion

Coconut coir can be developed into products that have economic value in the form of plant pot media or kokedama. Kokedama Serves as a growing medium for plants. Utilization of coir waste is one of the products to minimize waste, namely 3R (Reduce, Reuse, Recycle). Unused coir waste will have economic value and this is one part of the Desapreneur program which aims to minimize coconut coir waste in the Bogak environment, Tiwu Galih Village. The community became very enthusiastic in making coconut coir in the form of kokedama products or plant pot media from coconut coir in order to succeed in reducing waste from coconut. it is hoped that the community will continue to process coconut coir in accordance with the purpose of service so that in the future it can become a livelihood and tourist village with kokedama products.

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