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Empowerment of Karangtaruna in Polengan Village through Fish Cultivation and "Herbamina" Medicinal Plant

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Abstract
Livelihoods of Polengan Village are 83% as sand miners. Village potential with abundant water has not been used optimally by the community, especially young people due to lack of knowledge about a good fish farming. Some families have used this abundant water by making a fish pond in the yard of the house but this pool is just for fun or hobbies and has not been commercialized. Looking at the phenomena, it is necessary to empower youth to utilize the potential of this village to form a productive business unit focusing on fish cultivation by applying HERBAMINA technology (cultivation of medicinal plants and fish) in which it will improve the economy of the community and produce medicinal plants that can be used by the community. This service activity includes training in good fish farming methods, training in making herbamina and training in the utilization of herbal products. Approach method through face to face, mentoring and mentoring. The results of these community activities have increased the motivation of youth to utilize the potential of water sources for economic improvement, increased youth's knowledge and skills on how to fish well and increased knowledge of the use of herbal plants. The resulting community service programs are ponds with herbamina technology (fish cultivation and medicinal plants).

Keywords: Karangtaruna; fish cultivation; medicinal plant;

1. Introduction

Polengan village, Srumbung Magelang regency is at the foot of the western Merapi Mount located at 11 km radius from the top of the mountain. In the middle of the village, it divides two rivers, the Pandan River and the Jlegong River as a source of irrigating rice fields, fields and ponds. The people of Polengan Village have a variety of livelihoods, but their livelihoods are mainly farmers (573 owners of rice fields and 255 farm workers), that are suitable for farming because they are supported by a flow of water from around Mount Merapi.

Figure 1. Agricultural land in Polengan Village

Polengan village has great potential in the field of fresh water fisheries so that it has a great opportunity to improve the regional economy by mobilizing the existing natural potential through fish cultivation with the application of HERBAMINA technology so that in addition to producing fish also produce medicinal plants. Polengan village has great potential in the field of freshwater fisheries so that it has a great opportunity to improve the regional economy by mobilizing the existing natural potential through fish cultivation with the application of HERBAMINA technology so that in addition to producing fish also produce medicinal plants.

Figure 2. The potential of natural resources in the form of abundantabundant water

The potential of water is very unfortunate if it is not utilized to the possibly maximum extent. This abundant water is very possible to be used for fish cultivation which is very beneficial for the people of Polengan Village. Some families have made use of the potential of this water by making a pond in their yard but this pool is only for hobbies or pleasure so it has not been commercialized. This abundant water potential can be utilized by youth groups to create productive economic business opportunities for young people in Polengan.

Youth of Polengan Village were not motivated to utilize the village's potential to improve the economy. The purpose of this service is to empower the community of Polengan to utilize the available natural resources with fish culture using **HERBAMINA technology, which** is to use water continuously from the maintenance of **fish to medicinal plants and vice versa from medicinal plants to fish ponds and fish dung produced as compost of medicinal plants** so that with **the same land area two different commodities will be obtained,** namely medicinal plants and fish with optimum water supply for each commodity in utilizing the re-circulation system. With this technology can save water, pool

water quality is better and stable, minimal waste so it is environmentally friendly, does not need fertilizers and pesticides so that this technology has many advantages. In terms of the economic advantages of HERBAMINA technology is to provide **multiple benefits because this system produces fish and medicinal plants that are maintained**, so as to provide financial benefits that are much greater when compared with conventional methods. In addition, the benefits of this system guarantee the quality of fish maintenance media. This technology adopts from Yumina Bumina technology but replaces plants and sprays with herbal plants. Fish that are cultivated are catfish while medicinal plants that are cultivated are gotu kola.

2. Problems

The results of observations and interviews with village heads and members of Karangtaruna showed that the problem faced in general is the lack of motivation of youth to empower themselves to create productive economic businesses by utilizing the available natural resources (the potential for clean, clear water flows throughout the year due to a lack of knowledge about fish farming, while people who have utilized the potential of water by making ponds in the yard are still limited to fun and hobbies have not been commercialized.

3. Methods of Implementation

Method that will be used for the implementation of community service activities is a participatory community empowerment method with model Participatory Rural Apraissal which is a method of approach in the empowerment process and increased community participation, whose emphasis is on community involvement in the overall activities carried out. The stages of community service activities are described as follows:

Carrying out *Achievement Motivation Training* aims to motivate members of Karangtaruna to be interested in participating in this community service activity. Karang Taruna is a social organization as a place and means of development for every member of the community who grows up from social awareness and responsibility, by dab for the community (Anonim, 2010). In this activity the head of the implementing team explained some of the potential of the Polengan village that had not been used by the ___community even though it had a great opportunity to improve the economy and provide examples of successful entrepreneurs in the fisheries sector. Members of Karangtaruna were registered and collected FC cards for registration as a group of fish farmers and appointed chairman, secretary and treasurer.

The first training given was training in good fish farming. The training was held on the day in Gowok Hamlet. This activity was followed by members of the Karangtaruna. The material presented is how to fish well. The next training is training in the manufacture of herbamina systems. In this activity, the implementing team explained various methods of fish cultivation and medicinal plants on how to manufacture a herbamina system.

Making ponds begins with the purchase of tools and materials needed then preparing tools to be assembled into a tarpaulin pool. Continued by making Herbamina system. The implementing team explained the dual advantages of the herbamina system and explained several methods of making herbamina systems.

Fish seeds stocked are catfish with sizes 6-9. Seed spreading time in the morning so the temperature is not so hot. Cultivated medicinal plants are celery and gotu kola. Maintenance of catfish using guaranteed feed. Catfish feed should contain animal protein and feed according to needs. Harvesting of catfish is done when the fish is the size of consumption.

Training on the utilization of herbal plants by providing material on the benefits of herbal plants for the treatment and practice of making herbal cosmetics and making instant herbal medicine. Mentoring activities were carried out from the beginning, starting from making ponds, making herbamina technology, stocking seeds, raising fish, harvesting and selling.

4. Results and Discussion

The abundance of water resources potential in the village of Polengan that has not been used to improve the economy has encouraged the implementation team to empower the youth community in Polengan village. This service activity was carried out starting in March - August 2018. The method used for the implementation of community service activities is a participatory community empowerment method withmodel *Participatory Rural Apraissal* which is a method of approach in the empowerment process and increased community participation, whose emphasis on community involvement in the whole activities carried out. The core of the empowerment activity is giving motivation to understand the conditions and situations of daily work and foster their ability and courage to be critical of the conditions they face, so the key is to build participation. Community empowerment is one of the efforts to prepare the community by strengthening community institutions to be able to realize progress, independence and prosperity in an environment of sustainable social justice (Dariah, 2009)

Karangtaruna as an activity partner actively participates in the preparation, implementation and monitoring of activities. Other participation is to provide equipment and energy. After the activity is finished, Karang Taruna is required to take care of the facilities and infrastructures that have been given and develop the business so as to provide benefits to its members. Cayanti (2015) the role of Karangtarunas in reducing unemployment can be done through efforts to raise awareness, empowerment and development.

Achievement Motivation Training aims to motivate members of Karangtaruna to be interested in participating in this community service activity. In this activity the head of the implementing team explained some of the potentials of Polengan village that have not been used by the community even though it has a great opportunity to improve the economy and provide examples of successful entrepreneurs in the field of fisheries. the village of Polengan. Many youth members are interested in this program, but there are some obstacles because members of Karang Taruna already have jobs so they cannot follow them, limited land, limited capital, lack of knowledge and skills in fish farming.

Figure 3. Formation of fish cultivator group consisting of members of the Karang Taruna Gowok hamlet and Babadan village **j**oined into 1 group of Sido Urip fish farmers (pokdakan)

Figure 4. Training a good way of fish farming training on fish farming was carried out on the day in Gowok Hamlet.

As a guest speaker from the implementation team and Fitri Nur Agustim, S.Pi (fisheries extension officer from Srumbung sub-district). This activity was followed by members of the Karangtaruna involved in the program. The material presented includes location, water supply, layout and design, cleanliness of equipment facilities, preparation of cultivation containers, exploration of water, seeds, feed, use of chemicals, biological materials and fish medicine, harvesting, handling results, transportation, waste disposal, recording , personnel hygiene. Partners enthusiastically participated in this activity but there were several obstacles in the procurement of fish farming locations due to limited land.

Figure 5. Making the Herbamina system training

In this activity, the implementing team explained various methods of fish cultivation and medicinal plants on how to manufacture herbamina systems. Of the several methods that have been agreed, the manufacture of herbamina systems using the upper flow method and plants to be cultivated are gotu kola and celery.

This pond-making activity begins with the purchase of tools and materials needed and then prepares tools to be assembled into a tarpaulin pool. Each youth group made 3 ponds, namely 2 ponds measuring 1m x 2m and 1 pond measuring 2m x 2m.

Figure 6. Making pond frames in the herbamina system

The herbamina system made is a tidal system. The initial stage of this activity begins with the purchase of tools and materials needed. The tools and materials needed for the manufacture of ponds are planting containers (por, bucket), PVC pipes, filters, water pumps, fish (catfish) planting media (pumice, fern roots), plants (gotu kola, celery). Place the pot on the edge of the pool that has been prepared. The drainage channel from one pot to another is connected to PVC so that it becomes one set. The pot is filled with a split stone

garden, pumice, fern root from the bottom up. Pair the water pump and connect it to electricity.

Figure 7. Making HERBAMINA system (cultivation of medicinal plants and fish)

Herbamina system ponds are obsolete and fish stocking and medicinal plants are stocked. Fish seeds that are stocked from 6 to 9 are 1500. Seed spreading time in the morning so the temperature is not so hot. Cultivated medicinal plants are celery and gotu kola suitable for the maintenance of catfish using guaranteed feed. Catfish feed should contain animal protein and feed according to needs. Catfish need feed 3-6% of body weight. Feeding is scheduled for 3 times a day. Feeding in the afternoon or evening must be more. The lack of feed will make bigger fish prey smaller fish. When the fish is still small, the frequency must be more frequent.

Harvesting of catfish is done when the fish is the size of consumption. Harvesting is done in the morning so that catfish do not overheat. Water is reduced to approximately 15cm. Fish caught by netting. The rest of the water recedes until it runs out little by little and is captured with a fine grunt. Fish is temporarily placed in a bucket. After that, it is in the weighing container.

Figure 8. The process of harvesting catfish

Herbal plants grown in the herbamina system are used for treatment. In this training partners are trained in making herbal cosmetics and instant herbal medicine. Cosmetics made with the ingredients of gotu kola and white turmeric. Jagtap's research (2009) proved that the ethanol extract of Pegagan herb (Centella Asiatica, L) has antibacterial activity against Propionibacterium acne which is the cause of acne. Instant herbal made is instant ginger. Partners enthusiastically participate in this training activity and will try to be consumed by themselves and their families and in the future their hopes can be a business opportunity to produce herbal cosmetics and instant herbal.

Figure 9. Practice of making instant ginger and the administrator of Karangtaruna

5. Conclusion

The youth empowerment program through catfish farming activities with Herbamina system in Polengan Village, Srumbung District, Magelang Regency aims to improve the skills and knowledge of the Sido Urip fish cultivator group running well and smoothly through the provision of the largest pond with a size of 2m x 2 m as many as 2 ponds and 1m x 2 m as many as 4 ponds with seeds and feed one cycle of fish cultivation.

6. Acknowledgements

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