

Building The Village of People Become a Healthy and Productive Community



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Abstract: *Dusun Penggung is one of the Dusun (sub-village) located in Giripurwo village, Girimulyo district, Kulonprogo regency. The geographical condition, dry soil and far distance from the city are the main factors of underdeveloped village. Most of the people work as rice and corn farmers. During the dry season, there is a decline in agricultural activities because lack of water so that the people leave the farmer works to raising livestock and cultivating fish. The problem that occurs is the lack of skill in utilizing cattle dung to be used as soil fertilizer, in fish farming which has a great potential to increase income, in the health sector where the majority of Dusun Penggung residents work from morning to evening, which should require special attention on the health. Based on these potentials and problems, building village society to be a healthy and productive society program was conducted. The objectives of the program are to increase the knowledge and insight on the use of animal manure as fertilizer, increase understanding of fish farming procedures and productivity by making proper constructed fish ponds, provide information about various plants that are beneficial to health, and provide knowledge about telang flowers tea and natural dyes to maintain health. The main programs carried out included the utilization of animal manure, counseling and training on fish farming, counseling and training on planting, and utilization of telang flowers tea for health.*

Keywords: *About four key words or phrases in alphabetical order, separated by commas.*

I. INTRODUCTION

Dusun Hamlet is one of the Dusun in the Giripurwo village, Girimulyo district, Kulonprogo regency. Dusun Hamlet is divided into 5 RTs (sub-dusun) namely RT 68, 69, 70, 71, and 72. It takes 45 minutes from Universitas Muhammadiyah Yogyakarta. Giripurwo Village, in which Dusun Penggung located, is an underdeveloped village. The majority of Giripurwo villagers work as farmers.

Revised Manuscript Received on November 30, 2019.

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During the dry season, the agriculture sector declines so that many people switch works from planting rice to raising livestock and cultivating fish [1]. Besides farming, the majority of Dusun Penggung society raises livestock, namely cows and goats. They usually sell their livestock to get income for living. The manure, especially cattle and goats's manure which is abundant can be used as soil fertilizer.

Utilization of livestock manure optimizes existing resources and also reduces the buildup of dirt that causes unpleasant odors, and reduces air pollution caused by burning cattle dung [2].

Furthermore, the economical potential of Dusun Penggung is fish cultivation. The lack of knowledge about fish farming becomes the main problem. Some people in the Dusun use artificial small ponds to breed fish, but they do not have sufficient knowledge about it. Training on aquaculture is therefore necessary to increase the knowledge to be more productive. The people go farming everyday from early in the morning to the evening. They need to maintain their health and stamina. However, most of them lack of awareness about health. The location of the village is far from the hospital or health centers so as to take care of their health, the villagers usually take herbal herbs from nature, and hence an information on what and how flower plants can be consumed daily as the substitute for tea and nourish the body because of its natural ingredients was provided [3]. Based on the background problems formulated previously, the following are some of the objectives of the program: to increase community knowledge and insight on the use of animal manure as fertilizer, provide training on fish farming procedures, increase productivity by making well constructed fish ponds and giving the knowledge of fish processing, increase public awareness about health by providing information about natural plants beneficial to health namely telang flowers, teach in TPA to create outstanding and Islamic community of Dusun Penggung.

The framework carried out to overcome the problems included the manufacture of animal's manure, training on fish farming, training on planting and utilization of telang flowers for health. Besides the main program, a supportive or additional program, a program implemented in accordance with existing activities to help the society by providing services assistance. The programs, among others were tutoring for elementary and junior high school students, participating in community meetings and youth clubs, organizing community service, teaching in TPA and PAUD [4].

II. COMMUNITY SERVICE METHOD

The methods applied were counseling and training to achieve the goal both cognitive and psychomotor. Training is helpful to achieve the objectives of the programs. The people Dusun Penggung was confirmed to participate fully in the programs, carry out the programs and practice and implement them [5].

The approach method is useful for recognizing the behavior that is the object of observation [6]. By using the approach method, the supervisors or observers found the development of students or objects observed after providing a stimulus. This approach method was very helpful to achieve the program objectives such teaching in TPA for children, tutoring elementary and junior high school and early childhood students. The method was used to identify obstacles and potential in the learning program.

The earliest activity in community service was conducting observation at Dusun Penggung to study various potentials and problems in the society. Information was obtained from the head of the Dusun (Mr. Paijan), and other public figures. In addition, direct observation to the neighborhood of Dusun Penggung was also conducted. After the observations results were obtained, some programs and community service activities were made. The theme was "Building village society to be a healthy and productive society".

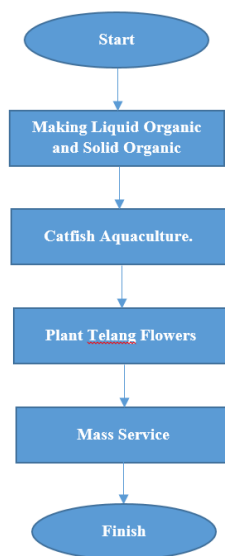


Fig. 1. Community Service Program

There are 4 main programs that will be implemented during the Community Service Program in show figure 1, among others **Making Liquid Organic and Solid Organic Fertilizers**. The training on compost making will be carried out on January 20, 2019. The implementation of this activity will involve farmer groups and residents of Penggung Hamlet who have livestock in every house. The activity will be carried out by means of the delivery of material conducted by Chia Tedi Hantryoko which will then be continued with the practice of making organic fertilizer. Submission of material consists of the benefits of organic fertilizer and how to make organic fertilizer from livestock manure. The orgaik manufacturing process will begin by making molds made of 1 x 1 meter wide cast board. Then mix green ingredients such as grass, cattle dung, bran, dolomite, and add 2 EM4 bottle caps, 8 molasses bottle caps and 10 liters of water. After that, it is

closed using a tarp. Our role in this activity is as a facilitator in the process of making it done by residents while we are only as guides. The results that will be obtained in this activity are that the people of Penggung Hamlet are able to understand and are able to process waste from livestock manure to be useful.

Catfish Aquaculture. Making catfish pond was conducted on the second week of community service program on January 27, 2019 from 10:00 to 12:00 p.m in the pavilion of Mr. Paijan's house, one of the farmers of Dusun Penggung. The program was attended by farmer groups, youth groups and others. The tools and materials to make the pond had been prepared for one week before the program implemented. They were tarpaulin, hoe, brick and sawdust. The presenter was Mr. Lamijo, a practitioner in catfish culture.

Plant Telang Flowers. The socialization of the benefits of consuming telang interest is carried out on the 3rd week of February 3, 2019, the purpose of the KKN 60 group to hold this socialization is to align with our theme, which is to make a healthy community. Telang flowers are medicinal plants that can be utilized by Penggung Hamlet residents as a tea brewing substitute. This activity was socialized to all members of Penggung Hamlet, both young and elderly. This socialization activity is carried out not much different from previous socialization activities, namely the distribution of brochures to residents, so that they can read them at any time. Besides that the KKN 60 group also distributed seeds ready for planting to residents, so that they planted in their respective homes.

Mass Service. This mass community service activity was carried out by all residents of Penggung Hamlet on the 4th week, namely on February 10, 2019. This activity was followed by 6 RTs, namely RT 67,68,69,70,71 and 72. For the sake of the effectiveness of the time used, we divided the area to be cleared. The first area is along the entrance of Dusun Penggung, the second area is the mosque area of Dusun Penggung and the surrounding roads, the third area is along the Dusun Penggung highway, and the fourth area is along RT 67 and 68 roads..

III. PROGRAM IMPLEMENTATION

Main Program

UMY Thematic Community Service Group 060 carried out four main programs, namely Solid and Liquid Organic Fertilizers Manufacture. Making organic fertilizer was carried out in the first week, on January 20, 2019 at the place one of the residents of Dusun Penggung, Mr. Tris. This activity aimed to optimize the potential of Dusun Penggung. This was due to the large number of people in Dusun Penggung who had livestock, such as cows and goats. To increase the value of cow dung, an assistance related to how to process it to be beneficial for the farmers was provided, especially to farmer groups in Dusun Penggung, called "Marsudi Mulyo". The tools and materials needed in making liquid and solid organic fertilizers were EM 4 activators, cow dung, rice bran, liquid sugar and water, buckets, small size drums and plastic jerry cans.

The presentation of the program was carried out from 10.00 am to 12.00 p.m. The first step was distributing brochures to the groups and explaining the purpose and objectives of making organic fertilizer. There was a question and answer session so that the farmers could learn it more comprehensively.

It presented and explained the meaning of organic fertilizer, the tools and materials needed to make the fertilizer, and how to make it.

After the presentation was completed, the farmers applied the theories into practice. The first fertilizer to make was solid organic fertilizer. The first step in making solid fertilizer was collecting dried leaves to be chopped. The dried chopped leaves were then mixed with EM4 activator. The mixture was placed in a plastic container and poured by liquid brown sugar and finally mixed with wet cow dung. The farmers were enthusiastic in participating in this activity, because they do not have the idea to make fertilizer from the cow dung. The process of making solid fertilizer is short, but the time to wait for the result was quite time-consuming. It took about four weeks.

After making solid organic fertilizer, the farmers continued to make liquid organic fertilizer with the basic ingredients almost the same as solid fertilizer, namely liquid bacteria EM4, bran, cow dung, liquid brown sugar, and water. The first step was mixing cow dung with EM4 bacteria, then adding rice bran, next pouring liquid sugar and water. The process of mixing the ingredients took moreless one hour. The farmers alternately mixed and stirred the fertilizer place in a small plastic drum.

After all mixed well, the fertilizer was covered and sat for three or four weeks for solid fertilizer and two weeks for liquid fertilizer. They were checked periodically to monitor the progress. everything was good and in accordance with the expectation. The fertilizer manufacture activity was responded positively by the farmer groups.

On February 3, 2019, 2 weeks after the process, the liquid fertilizer was ready to be used to fertilize the plants. The fertilizer was safe for soil meaning that it would not damage the soil. The fertilizer was put in small plastic containers. It is expected that in the future the farmers can continue making this fertilizer so that their plants become fertile, healthy, and chemical free without damaging the soil.

Then on February 14, a check on solid fertilizer was performed. It was found that the solid fertilizer was ready to be used for plants. The farmers stored the fertilizer in a large white plastic container. It is expected that the farmers can continue making the fertilizer for their own benefit.

In carrying out the program, there was no problem found. It was due to the low-cost materials, available in the Dusun and easy to find. It just took quite a time to make it. However, it was not a problem for the farmer groups because making this fertilizer can be done periodically according to their needs.

Catfish Culture Program

The catfish culture program was conducted on the second week of community service program on January 27, 2019 from 10:00 to 12:00 p.m in the pavilion of Mr. Paijan's house in show figure 2. He was one of the farmers of Dusun Penggung. The program was attended by farmer groups, youth groups and others. The tools and materials to make the

pond had been prepared for one week before the program implemented. They were tarpaulin, hoe, brick and sawdust. The presenter was Mr. Lamijo, a practitioner in catfish culture.

Since the construction of fish pond took quite a long time, the time to make the pond was made early at 7:00 in the morning. The size of the pond was 4x3 square meters. The depth was one meter. All farmer groups participated in the program. The tool for digging was a hoe. The activity finished at 09.00 a.m. The substances contained in the tarpaulin must be removed first before the fish seeds were dispersed in the water. The pond filled with water needs to let sit for 1-2 weeks to neutralize it. The catfish seeds dispersed were 1.000 obtained from the Community Service group 60.



Fig. 2. Catfish Culture Program

After the construction of the pond was completed, the socialization activities continued. It started by distributing brochures about catfish culture so that the farmers could easily understand what was conveyed by Mr. Lamijo, the presenter. Mr. Lamijo also provided a question and answer session so that residents could understand more details about the catfish cultivation. The farmers were enthusiastic in exploring catfish farming materials. Catfish culture is in great demand. It is influenced by the high market demands that continues to increase every year.

The problem was to find the source of catfish seeds. The problem rose because of the bad weather. However, it could be overcome by Mr. Lamijo, the catfish culture practitioner. The seeds were obtained from a traditional market. The purpose of the service community program group 060 was to provide knowledge that can be applied by the people of Dusun Penggung. Large vacant lands available in the Dusun can be used to make fish ponds to increase the economy of the people. In addition, the socialization of catfish culture is expected to become a new livelihood and reduce unemployment. Farmer groups and youth groups can do catfish culture as their side job after planting or gardening, adjusting to our theme, to be a productive society.

Telang Flower plants program

The socialization of the benefits of consuming telang tea was carried out on the 3rd week of February 3, 2019. The purpose, aligning with the program theme, was to make a healthy community. Telang flowers are medicinal plants that can be utilized by the people of Penggung as the substitute or complement of tea.

This activity was socialized to all people of Dusun Penggung, both young and elderly.

The first step was presenting the medicinal benefits of the telang tea and distributing brochures to the participants, so that they can read them at any time. Besides that, the community service group also distributed seeds ready for planting.

The presentation of the program was held at 08.00 a.m in the house of Mr. Paijan, one of Dusun Penggung residents. The participants were mostly women and the elderly. Submission of material was delivered by one of our KKN partners, namely Kharissa Puspa Dani, and our role in this socialization was to become a facilitator. In our group outreach we convey the benefits of consuming telang flowers regularly. The benefits of telang flowers other than as brewing drinks, can also be used for food coloring and we try on making plain agar and given the original color of telang flowers. Then the second session was held at 10:00 to 12:00 noon, this session was attended by the youth organization.



Fig. 3. Telang Flower plants program

But in fact the young people were less enthusiastic in attending this socialization, as proof it was only attended by 2 people, but we still carried out their socialization activities. In session two it was not much different from the first session's socialization activities. And continued planting telang flowers near the Kampling Post. The results obtained from this socialization activity were that the residents of Penggung Hamlet were able to understand and be able to plant telang flower plants, the hope of the KKN 60 group was that telang flower plants could be cultivated and could be income for local residents.

Mass Community Service

Mass community service activity was carried out by all residents of Dusun Penggung on the 4th week, namely on February 10, 2019. It aimed to make the dusun clean. This activity was followed by six RTs (Neighborhood Community), namely RT 67, 68, 69, 70, 71 and 72. For time effectiveness, the activities were divided based on smaller areas. The first area was along the entrance of Dusun Penggung, the second area was the mosque area of Dusun Penggung, the third area was along the Dusun Penggung road, and the fourth area was along RT 67 and 68 roads. This activity was running well without any obstacles. The results showed that the roads and areas around Dusun Penggung were clean and neat.

IV. CONCLUSION

The conclusion drawn from the community service in Dusun

Penggung carried out from January 14 to February 14, 2019 is that the students of Universitas Muhammadiyah are able to adapt well, so there is a cooperative relationship the people of Dusun Penggung and the students. They provide basic programs and additional programs needed by the community namely the utilization of animal waste in Dusun Penggung, Catfish Ponds making, and Telang Flower Planting, and provide assistance to the community in Dusun Penggung in particular to the community, farmer groups and Family Empowerment Program (FEP) groups.

Some suggestions for the people of Dusun Penggung after obtaining the program are to make sustainable organic fertilizer to be marketed in the future, seriously follow up the planting of telang flowers to make telang flower cultivation house in the future, and to pay more attention to the TPA lecturers so that BTA lafadz is increased, and finally increase congregational prayers in the mosques. Suggestions for Universitas Muhammadiyah, Yogyakarta are to rise subsidies for the program, considering the aim of the program is to develop villages to be more advance in knowledge and technology, announce and inform the date of the program much earlier so that the preparation and planning can be set more carefully and thoroughly, and give notifications and announcements precisely and clearly not to make confusion for the students.

REFERENCES

1. G. O. Young, "Synthetic structure of industrial plastics (Book style with paper title and editor)," in *Plastics*, 2nd ed. vol. 3, J. Peters, Ed. New York: McGraw-Hill, 1964, pp. 15–64.
2. 1. J. Syafrjadi, A. Nur, N. Chamim, R. O. Wiyagi, and R. Syahputra, "LED and Servo Motor Control Via Bluetooth Based on Android Applications," *Int. J. Recent Technol. Eng.*, vol. 8, no. 2, pp. 6227–6231, Jul. 2019.
3. 2. A. N. N. Chamim, M. E. Fawzi, R. O. Wiyagi, I. Iswanto, and R. Syahputra, "Control of Wheeled Robots with Bluetooth-Based Smartphones," *Int. J. Recent Technol. Eng.*, vol. 8, no. 2, pp. 6244–6247, Jul. 2019.
4. 3. K. Purwanto, I. Iswanto, T. Khristanto, and M. Yusvin, "Microcontroller-based RFID, GSM and GPS for Motorcycle Security System," *Int. J. Adv. Comput. Sci. Appl.*, vol. 10, no. 3, pp. 447–451, 2019.
5. 4. A. N. N. Chamim, M. Heru Gustaman, N. M. Raharja, and I. Iswanto, "Uninterruptable Power Supply based on Switching Regulator and Modified Sine Wave," *Int. J. Electr. Comput. Eng.*, vol. 7, no. 3, p. 1161, Jun. 2017.
6. 5. A. N. N. Chamim, D. Ahmadi, and Iswanto, "Atmega16 implementation as indicators of maximum

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