

# DEVELOPING A HEALTHY CACAO FARM BY EMPOWERING FARMER GROUP IN GIRIPURWO VILLAGE, KULON PROGO REGENCY, YOGYAKARTA, INDONESIA

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## ABSTRACT

As a village choosing cacao to be its main commodity cultivated, the farm condition in Giripurwo, Kulon Progo Regency should need more improvement. Many cacao fruits were infected by *Phytophthora* sp. which decrease the production. One of our community service programs in this area was developing the healthy cacao farm mainly to manage the disease in order to improve productivity. The target was cacao farmers incorporated in farming group of Nglengkong hamlet. This program included: (1) extension program of pest and disease management, as well as the farming management; (2) training on branch pruning, making *rorak* (dead-end trench), *sarungisasi* (holster), and branch extension technology; and (3) providing farm management equipment.

**Keywords:** healthy cacao farm, cacao, pest and disease management, farming management

## INTRODUCTION

Girimulyo District has promising potential in the agricultural sector, especially in the plantation area. In 2016, the cocoa plantation commodity which was one of popular commodities in Girimulyo, has been cultivated to reach 643 ha of planting area. Of this area, 441 hectares of plants are able to produce 2,937 tons of cacao [Anon., 2016]. This cacao farming has been carried out by the local community in a relatively long period of time since 1980. Most of the household in Girimulyo planted cocoa in their yards and fields. This plant has contributed as an income for the household.

One of the farmer groups which is still actively engaged in cocoa cultivation in Girimulyo is Ngudi Makmur Farmer Group. All cocoa produced by this group is always absorbed by the market such as cacao collectors, market traders and cocoa processing factories such as PT. Pagilaran. Even though cocoa cultivation is still able to contribute to the farmers' income, the management of plant-pest in the cocoa farm in Giripurwo has not been done well. Farmers stated that *Phytophthora* fruit rot causing a decrease in cocoa production in their gardens. While other said that the productivity among plants are different, also they told that lack of knowledge to maintenance the plant became one of the reasons to lost the productivity of cacao plants.

## PROBLEMS AND GOALS

Considering the challenges and opportunities related to cacao plantation management in Girimulyo, we proposed a program for developing a Healthy Cacao Farm by Empowering Farmer Group in Giripurwo Village, Kulon Progo Regency, Yogyakarta, Indonesia. The

problems which we addressed were what kind of cacao plant management for developing a healthy cacao farm, what applicative technology could be applied and taught to the farmers, and how could we utilize the cacao leaves garbage become useful for the plant. Those questions become our guidance to reach the goal, developing a healthy cacao farm.

## **METHODS**

To reach the goals we used combination of community education and extension which included these steps:

1. Preparation  
Before holding this program, we prepared by discussions with farmer group to figure out the obstacles, challenges and develop a work plan schedule program.
2. Cacao farm management practices  
Garden management practices were carried out in collaboration with field officers of PT. Pagilaran. The education and extension were used in order to teach and show directly to the farmer how to manage the land. The extensions were about how to prune the stems, wrap the fruit, rorak making, and making connection for new plant.
3. Mentoring of women's farmer groups  
Conducted by pioneering meetings with the women's farmer's or who deal with marketing cocoa beans from farmers to PT. Pagilaran as buyer.

## **RESULT AND DISCUSSION**

### **1. Preparation**

The discussion as a survey of the problems with the Ngudi Makmur Dusung Nglengkong farmer group, resulted in the dealing of a routine activity and meeting which every Monday called cocoa day to learn together about gardens and solving the problems by coming to the field directly. Cocoa day activities run smoothly every week when we hand over the help of the pruning tool, and until now the team members for the UPH process are carried out in mutual cooperation.



**Figure 1. Meeting to discuss about the program preparation**

### **2. Garden Management Practices**

The grant team first came in early May 2017 to discuss with the Nglengkong Chief and field staff from PT Pagilaran to coordinate what activities were carried out, followed by

the first meeting, counseling on Cocoa Pest management and garden maintenance. In order to practice the garden management, we handover of the tools garden management for the farmer group followed by extension and education about the plant pruning, rorak making, fruit wrapping and plant connection technology.



**Figure 2. Hand over the tools of garden management**

The plant pruning was carried out in order to reduce the evaporation of plant. Cacao plant which never be pruned will lead to lack of productivity because the amount of water they used are high. By pruning the plant, will reduce the lost water and distribute the photosynthesis result to the fruit not to its leaves.



**Figure 3. Initial conditions of cocoa farms, lack of sunlight, low sanitation, many branches and dead fruit without pruning.**

Rorak is a hole with a certain size made in the field and parallel to the contour lines. The function of rorak is to trap and absorb water into the soil and to collect sediment from the field. Making rorak can be combined with vertical mulch to get compost. This also became our attention since Girimulyo place belongs to water dry areas with water shortages. Therefore practices for saving the water is needed for kakao. The rorak was made also in order to keep the leaves and compost it to be fertilizer which will be used by the plants.





**Figure 4. Rorak making**

The fruit wrapping is needed in order to keep the cacao from the insects. The simple technology was introduced in order to wrap the fruit by plastic. The position of fruit somehow could not be reached by our hands, therefore extension stick is needed in this occasion. We tried to make a simple extension by using the combination of pipe, plastic and rubber which applied directly to the fruits on the plant.



**Figure 5. Fruit wrapping extension**

The interesting thing in this farmer group is the involvement of mothers even though many are already old, but they are very enthusiastic about learning and practicing in their gardens. To support the improvement of the knowledge of Cocoa cultivation, we provide an official guide to Cocoa Cultivation and Postharvest from Centre of Cocoa Research and a book published by UGM Press entitled History, Botany, Process of Production, Processing, and Trade of Cocoa to Ngudi Makmur Farmers Group. Both books are complete references about Cocoa that farmers need to have. Books have been given to the heads of farmer groups and groups of women farmers in the hope that they can be accessed by all members who want to add knowledge through this book.



**Figure 6. Extension of pest management and pruning**

The making of the Cocoa Processing Unit (UPH) is carried out by members of the farmer group in mutual cooperation. The cost is mainly the purchase of UV and UV paper assisted by Community Service Grants from UGM.



**Figure 7. UPH making**

## **CONCLUSION**

Evaluation of the success of the program was carried out through interviews with the management of the farmer groups and monitoring the service team to the farmer's farm. Farmers in the Ngudi Makmur Farmer Group began to independently do garden pruning. Because they have realized the importance of plant health to the success of production. The group's management stated that the pruning equipment and donated grating for the glove are often borrowed by the farmers to do pruning and gabbing independently in their garden.

## **REFERENCES**

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