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Empowerment of the "Sinar Bahagia" Cocoa Farmers Group in Bebidas Village, Wanasaba District, East Lombok Regency Through Diversification of Cocoa Bean Processing

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ABSTRACT

Bebidas Village is one of the villages in Wanasaba District, East Lombok Regency, which has relatively potential to be developed into a cocoa production center. There are two main obstacles faced by farmers, namely the lack of knowledge, attitudes, and skills of cocoa farmers towards cocoa farming management and cocoa bean processing technology into various commercial products and the absence of a standard procedure to produce quality dry cocoa beans. This community service activity aims to assist in processing cocoa plant products into various cocoa products with economic value to increase the income of cocoa farmers in Bebidas Village, Wanasaba District, East Lombok Regency. This activity can increase the productivity of cocoa plants and increase the types of processed cocoa plant products with commercial value.

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INTRODUCTION

In general, farmers in Bebidas village sell dry beans without fermentation and not processed products, so the economic price of cocoa is lower. If cocoa is fermented and processed into finished products, it will increase profits (Statistik, 2023). Cocoa fruit, if processed with appropriate technology in an integrated manner, can meet various needs for industry, agriculture, animal husbandry, health, and various other needs (Daniel, M., 2005). Processing technology and downstream industrial development are also widely available, including fermentation technology, waste processing technology, and product diversification technology (Kartasapoetra, 2006). Several types of products can be produced from cocoa. In general, cocoa beans can be processed into three final products: cocoa butter, cocoa powder, and chocolate paste or chocolate food, which in their processing depend on each other (Kuswartini, 2011).

In addition, cocoa farmers in Bebidas village do not yet understand about the processing of cocoa waste (cocoa skin, cocoa leaves, and pulp), which can be used as bokashi fertilizer as a substitute for synthetic fertilizer so that the cost of cocoa plant production can be reduced (Mardikanto, T., Soebianto, 2012). Several types of products can be produced from cocoa, both from skin, leaves, and pulp (Sukardiyono, 2000). Cocoa skin can be used as compost, animal feed, mushroom cultivation substrate, theobromine extraction, and fuel. In addition, cocoa farmers also do not yet have the knowledge and ability to use natural materials in their surroundings in making organic pesticides (Wahyudi, T.T.R, Panggabean, 2013).

Cocoa farming in Bebidas village has been carried out in the form of community plantations. Cocoa farming is managed by the farmers themselves to meet family needs. Cocoa farming activities that are carried out have not implemented economic principles, namely business management, even though they have joined a farmer group called the Bebidas Permai Farmers Group. This farmer group accommodates both plantation and horticultural farmers.

There are 2 main obstacles faced by farmers in efforts to increase the productivity of cocoa farming businesses in processing cocoa beans, namely: 1. Lack of knowledge, attitudes, and skills of cocoa farmers towards cocoa farming business management and cocoa bean processing technology into various commercial products, and 2). The absence of a standard procedure to produce quality dry cocoa beans.

The above obstacles can be overcome by empowering cocoa farmers with the diversification of cocoa plant processing, especially cocoa beans so that the income of cocoa farmers can increase and the welfare of the Bebidas village community will also improve. The purpose of this activity is to provide solutions to unresolved problems, namely the production of dry cocoa beans with good quality and further processing of dry cocoa beans into high-value economic products (cocoa powder, chocolate candy, cocoa butter, chocolate drinks, and so on). Partners get more income. In addition, from this activity, seen from the MBKM aspect, IKU 2 will also be achieved, namely, students doing activities outside campus, and IKU 6, namely study programs collaborating with partners.

IMPLEMENTATION AND METHODS

Community service was held at the "Sinar Bahagia I" Cocoa Farmer Group, Bebidas Village, East Lombok, involving several related parties. The agencies involved include the Faculty of Agriculture, Warmadewa University, the Faculty of Food Technology and Agroindustry, Mataram University, the Community Service Institute of Warmadewa University, and the Bebidas Village Apparatus. The implementation period starts from April to December 2024.
In planning this community service, the methods used are:

1. Interview and discussion methods to find out the problems faced by partners.
2. Counseling through direct face-to-face meetings so that partners gain knowledge in handling wet cocoa beans, increasing the economic value of dry cocoa beans, making chocolate powder, chocolate sweets, and chocolate drinks, product packaging and labeling, and product marketing.
3. Direct practice method by providing appropriate technology in handling wet cocoa beans into dry cocoa beans through the correct fermentation process, making chocolate powder, chocolate sweets, and chocolate drinks, packaging and labeling, and product marketing.

The stages carried out in the implementation of community service activities include:

1. Survey and determination of the location of the service and the number of participants.
2. Handling problems faced by the Sinar Bahagia I Cocoa Farmers Group.
3. Identification of the needs and expectations of the Sinar Bahagia I Cocoa Farmers Group.
4. Solutions provided to the problems faced.
5. Implementation of activities through the provision of theory and practice.
6. Monitoring and evaluation of activities and results.

RESULTS AND DISCUSSION

Community service activities focused on empowering the Sinar Bahagia I Cocoa Farmers Group in Bebidas Village have been successfully implemented. Through the application of appropriate technology in diversifying cocoa bean processing, the farmer group has been able to increase the added value of local cocoa products. The training provided includes fermentation techniques, drying, and processing of cocoa into derivative products such as chocolate bars, cocoa powder, and chocolate sweets. As a result, the farmer group is not only able to meet the needs of the local market but also opens up opportunities to enter a wider market. In addition, this activity has also contributed to the development of agricultural-based ecotourism in Bebidas Village, with the potential to attract tourists interested in the traditional chocolate production process.

This community service activity has successfully empowered 25 members of the Sinar Bahagia I Cocoa Farmers Group. Through training and the application of appropriate technology, the farmer group was able to increase their average income by 50%. Various processed cocoa products, such as chocolate bars and cocoa powder, have been successfully marketed in the local

market and have attracted tourists. To ensure the sustainability of the program, a joint business group has been formed to manage product marketing. Further product diversification is needed, for example, by developing processed cocoa products based on local spices. The implementation of cocoa bean processing activities into chocolate powder products can be seen in Figure.

Figure 1. Counseling by the PKM Unwar Team Resource Person to Partners

Figure 2. Group Photo of Unwar PKM Team (Lecturers and Students)

Figure 3. Presentation of souvenirs from the Unwar PKM Team to Partners

Figure 4. Innovation Products

Figure 5. Training by the Unwar PKM Team for Partners

Figure 6. Training by the Unwar PKM Team for Partners

Figure 7. Group Photo of PKM Unwar Team with Partners and Unram Team

Technology And Innovation Products (Hard And Soft)

The technology and innovation products implemented in this community service program include software for cocoa production planning and management, as well as simple equipment for processing cocoa beans into derivative products such as chocolate, cocoa powder, and other processed products. The main innovation lies in the diversification of cocoa products that are adjusted to market interests and local tourism potential. This appropriate technology not only increases the added value of cocoa products but also empowers the Sinar Bahagia I Cocoa Farmers Group to manage their businesses independently and sustainably. Thus, the development of cocoa-based ecotourism can be a source of additional income for the Bebidas Village community and contribute to environmental conservation. Training by the Unwar PKM Team for Partners.

Application Of Technology And Innovation To The Community (Relevance And Community Participation)

This community service is very relevant in the context of empowering rural communities, especially the Sinar Bahagia I cocoa farmer group in Bebidas

Village. Active community participation in this program aims to increase the added value of local cocoa products through processing diversification. The application of appropriate technology in the processing process is expected to not only improve product quality but also reduce production costs and increase work efficiency. Thus, farmer groups can obtain better income and improve economic welfare. The development of cocoa-based ecotourism will also open up new jobs and preserve the surrounding environment. Through this program, it is hoped that the community can better appreciate the potential of local resources and actively contribute to village development.

Impact (Usefulness And Productivity)

Utilization of local cocoa farming potential through the application of appropriate technology has had a significant impact on the Sinar Bahagia I cocoa farmer group in Bebidas Village. Diversification of cocoa bean processing not only increases the added value of the product but also opens up wider market opportunities. This has an impact on increasing farmers income, improving family welfare, and encouraging local economic growth. Furthermore, the development of cocoa-based ecotourism has provided a unique experience for tourists and introduced the cultural richness and natural potential of Bebidas Village. The application of appropriate technology in cocoa bean processing has increased the productivity and efficiency of the Sinar Bahagia I cocoa farmer group. With product diversification, farmers are no longer dependent on fluctuations in the price of raw cocoa beans. Appropriate technology has also helped reduce production waste and improve the quality of the final product. This ultimately contributes to increasing the competitiveness of local cocoa products in both domestic and international markets.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

From the community service activities that have been carried out, it can be concluded that the utilization of local agricultural potential, especially cocoa, through the application of appropriate technology can provide a positive impact on the empowerment of the Sinar Bahagia I Cocoa farmer group in Bebidas Village, Wanasaba District, East Lombok, West Nusa Tenggara. Diversification of cocoa bean processing not only increases the added value of the product but also opens up wider market opportunities. This is in line with the development of ecotourism, which can be an attraction for tourists and increase community income.

Recommendations

- Capacity Building: Continuous training is needed for members of farmer groups related to good cocoa cultivation techniques, processing of harvested products, and attractive product packaging.
- Product Development: Innovation of cocoa derivative products is carried out that is more diverse and by market trends, such as chocolate bars with

various flavors, chocolate drinks, chocolate sweets, or cocoa-based cosmetic products.

- Marketing: Building a wider marketing network, both online and offline. Cooperation with local governments, tourism actors, and other MSMEs can strengthen product marketing.

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