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Palm Sugar Product Processing Diversification

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ABSTRACT

The Palm Sugar Craftsmen Group in Borisallo Village is one of the sugar producing groups in Tinggi Mocong District, Gowa Regency with 20 members. The potential for palm sugar raw material sourced from sap water is quite large to be developed in the future, considering that this area has very adequate palm tree potential. ends in October 2020. The method used in PKM activities is a method of training and mentoring partners related to production, branding, packaging, and marketing processes to change the group production process from traditional methods to more advanced by implementing innovations in sugar in the form of liquid sugar ant sugar and sugar molding with a new method. Through service activities, the community can help partners to facilitate through entrepreneurial guidance and training, so that they can produce sugar variants through product diversification, packaging and branding so as to increase added value and increase group income.

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Introduction

Empowerment of the community's economy through the Community Partnership Program (PkM) is a strategic program to encourage the strengthening of ownership of factors of production, strengthening the management and marketing of local community products to increase income through the creation of added value to production factors and production results. The Community Partnership Program is also intended so that the community gains access to information, knowledge and skills, which must be carried out in multi-aspects, both from the aspect of the community itself, as well as aspects of the policy.

Borisallo Village, ParangloE District, is one of UMI's assisted villages which is currently split into two villages namely Bonto Kassi Village and Borisallo Village and village administration is still carried out by Bontokassi Village, being the location of the partnership program for the community as a form of community service for empowering Rural Communities from a lack of education and skills. To realize this dream it is considered important to provide guidance and entrepreneurship training for the community through the Community Partnership Program (PkM) to open their horizons in dealing with life and entrepreneurship so that they can change in a positive direction, meaning that they think as much as possible about living independently through business activities as a activities that can help increase income,

utilization of a very broad natural potential to be utilized in doing business. One of the potentials of the people of Borisallo Village is the area of Palm Tree Production Forest which has the potential to be utilized for the home industry for processing "Aren Sugar", but until now the community has not carried out production activities for diversification of processed palm sugar products so they have not been able to improve their welfare. Through community service with the implementation of the Community Partnership Program (PkM), it is hoped that the mind can change in processing and utilizing widely available natural resources.

The location of the Community Partnership Program (PkM) is Borisallo Village, Parangloe District, Gowa Regency, South Sulawesi. Based on Gowa Regency BPS data in 2014, Parangloe District has a very large forest area potential of around 13,917.26 ha or around 51.87% of the total forest in Gowa Regency. In addition, Parangloe District has the largest production forest area. In general, the people of Borisallo Village, Parangloe District, work as rice field farmers, lading and raising livestock. They also have side jobs managing brown sugar in the form of coconut shells. In addition, the community still uses the forest by clearing land for farming, managing timber and non-timber forest products. Land tenure institutions have been very strong for generations, even though the forestry administration noted that forest areas controlled by the community are production forest areas. A hereditary coconut shell brown sugar processing business. At first it was carried out by the community, the majority of which are tappers (penderes), supplying sap to be used as sugar because production is abundant. However, the production of sap only reaches brown sugar which is often found in markets.

The area of forest with palm commodities is ± 320 Ha. The equipment used to make palm sugar is still traditional and manual in the form of; pans, stoves, simple printing tools from coconut shells and drying systems using the help of sunlight and other supporting equipment. The production capacity for each group (4-6 people) is around 15-20 kg/day with an investment value of Rp. 24,000/kg as well as product marketing techniques according to demand and there has been no marketing development. The selling price is determined from the raw material inventory of the sap.

From the explanation of the problems above, there are several real problems that must be solved immediately, namely: 1) Partners generally do not have good insight into entrepreneurship, so that part of their free time has not been used optimally, 2) Partner locations are very potential for carry out business activities because it is supported by production forest land with large and potential palm tree plants, but because insight is still limited, this opportunity has not been utilized optimally, 3) Partners do not understand production techniques for processing diversified processed sugar products so they need guidance and training in carrying out diversification of sugar products because currently the group only produces molded sugar in the form of coconut shells, while sugar variants such as liquid sugar and ant sugar have a market that is quite potential but has not yet been served. From the problem description, there are several real problems that must be solved immediately, namely: 1) In general, Partners do not understand the importance of entrepreneurship in increasing income, 2) Partners do not yet have knowledge about how to do business diversification of sugar production easily, precisely and correctly, 3) Partners face constraints on access to production skills so that they are less open minded to try to change their product variants, 4) Partners are still overshadowed by difficulties in trying so they become doubtful because they are afraid of facing risks such as failure in business .

Through this PkM activity, the servant will facilitate Partners in helping direct them to positive and beneficial activities so that the potential possessed by the Partner community can be beneficial in household-scale palm sugar industry activities that are in accordance with the level of ability of the Partner community, so that with increased productivity, groups The partner will increase his well-being. The product proclaimed in this dedication is the "Parmel Sugar Industry", taking into account that the raw materials are widely available and the market is still possible, and the capital required is relatively small and the technology required is not too difficult.

In an effort to overcome the problems of Partners stated above, a solution is offered for implementing community service activities in applying science and technology to the community in the form of program agreements that are a priority in this community service activity. Based on the situation analysis put forward, several programs offered for agreement include: Providing guidance and counseling on how the role of entrepreneurs helps households in encouraging increased household welfare. Technical training on making palm sugar products by means of product diversification properly and correctly so that businesses can develop. Training on how to market the right product, to reach target consumers will be addressed. Training on making products that are determined based on Partner needs after a meeting and initial agreement on the implementation of PkM activities. Mitar can target Verified Palm Sugar Products products based on economic conditions, skills and available funds.

Methods of Implementation of Activities

The method applied to the implementation of the partnership program for the community (PkM) this is the provision of science and technology training materials to the Partner group. Determination of partners using the methodpurposive sampling namely directly selecting the "palm sugar craftsmen group" in Borisallo Village, Parangloe District, Gowa Regency with the consideration that as a group of productive people who have not used their time optimally, they will be equipped with skills in home industries that can better suit their needs. This business group was given training, in the form of theory and assistance in making Nira Water Processed products into Various Palm Sugar Products.

To find out the effectiveness of training and mentoring, interviews were conducted with participants before the training was carried out to map the capabilities of each Partner (free test). Based on the results of the mapping, the servant can arrange a service program starting from the beginning of the activity until the community service program ends.

The method used in the training is the general and individual training methods, namely training each member of the group one by one. Programs that have been agreed upon with business group partners are carried out using the following methods:

1. Training on making more modern Printed Sugar products.
2. Training on making liquid sugar products.
3. Training to make ant sugar.
4. Good and right entrepreneurship training.

Activity Implementation Plan

Preparation: activities carried out include.

1. Outreach to partners and local government about the PkM which will be carried out in Bori Sallo Village, Parangloe District, Gowa Regency.
2. Appoint one person as the field coordinator to facilitate communication during the activity.
3. Meetings with the Partner group and several members of the partner group to discuss the program schedule for PkM activities and agreed together with the activity implementing team.
4. Socialize partners who will take part in the activity, namely 10-15 people from the Partner group.

Provision of training:

1. Assistance/training in product manufacturing techniques, which is carried out jointly by partners and the implementation PkM team. Implementation team PkM acts as a director in carrying out activities made together with partners. Furthermore, the efforts that have been made are efforts that can be carried out throughout time and continuously.
2. Training on management/processing and handling of business and products in the form of practical theoretical training.

Activity Evaluation:

After carrying out training activities / training of the entire series of program activities, participants will be evaluated:

1. At the end of the training program, individual participants are able to make their own products and run a business based on the training results as agreed.
2. At the end of the program participants are required to show the results of the practice (palm sugar products that have been made) and then documented.

Procedures and Processes for Making Various Palm Sugar Products

Procedures and implementation processes for the manufacture of Various Palm Sugar Products, are important in carrying out activities to avoid any obstacles or obstacles in the process of implementing activities, by starting from procedures, preparation and implementation of activities.

Findings and Discussion

Time and form of activity

This activity was carried out in Borisallo Village, PrangloE District, Gowa Regency, on Thursday, October 22, 2020. The form of the activity being carried out was Entrepreneurship Training and Technical Guidance for Processing Palm Sugar for Palm Sugar Craftsmen Groups in Borisallo/Bontokassi Village, Parangloe District. This activity was carried out by involving several members of the palm sugar craftsmen group directly, so that they could follow and practice directly so they could understand the procedures for making various palm sugar products and packaging and labeling.

Implementation of Activities

Community Service Activities in the form of Processing Various types of palm sugar products, can be carried out with the support of the LPMD-UMI, in the form of Facilitation and financial assistance for the implementation of activities. Community Service activities are carried out with the Borisallo Village Sugar Craftsmen group with the following procedures and steps:

1. Communicating and coordinating between the Chief Executive of PKM and Partners
2. Prepare materials and equipment to be used in the processing of various palm sugar products.
3. Socialization of the PkM Activity Program and training on how to make various palm sugar products (liquid sugar, ant sugar, and printed sugar).
   Participants Participants

Figure 2. Opening of PKM Activities for Diversification of Palm Sugar Products

The implementation of Community Service can be carried out properly and smoothly thanks to the support of all parties, namely the Chairperson of the Palm Sugar Craftsmen Group and all community leaders so that this activity can be carried out. This activity received a very good response from the community and community leaders.

In general, the participants feel the benefits of the Diversification PkM activities in palm sugar processing, because such palm sugar processing activities can increase added value to the community's economic activities so that the economic value becomes greater than before.

Overview of the results achieved

Community Service activities carried out in the Village of Borisallo/Bontokassi, Parangloe District, are a manifestation of the Tridarma of Higher Education in order to carry out the third dharma in the form of community service. This is intended to be able to carry out

transformation and transfer of appropriate technology for rural communities to be able to provide motivation and change mindsets in carrying out activities in their villages.

The results that are expected to be achieved in community service activities are changes in the mindset and insight of the community in working and trying to take advantage of the potential of existing resources in rural areas. Therefore Community Service activities carried out can provide results in the form of:

1. Increasing the Partner's ability to apply appropriate technology to produce household industry products.
2. There has been a change in Partner's insight in innovating in carrying out natural resource processing activities in their village.
3. There has been a change in productivity and added value in producing home industry products in the village.
4. Increased household income from household industrial activities.

Activity Evaluation

The implementation of Community Service activities is a strategic activity in transferring appropriate technology for rural communities who are not yet able to independently access technology, so that through the mediation of Community Service activities, communities carried out by Campuses that own and master certain technologies can apply technology in a community that is lagging behind technology. The aim of PKM activities is how to become a medium for change in the use of technology so that technology can easily and quickly be transferred and transformed in the lives of rural communities to help them solve problems encountered in production.

For the Community Service program which is being carried out in 2020, communication is carried out through a meeting of Team Leaders and members with the Chairperson of the Palm Sugar Craftsmen Group to convey the intention of carrying out PkM activities as well as socialize the program of activities to be carried out in the Village of Borisallo/Bontokassi, ParangloE District, Gowa Regency. From the results of this communication, a statement of willingness for the Palm Sugar Craftsmen Group was made as one of the requirements for the implementation of PkM. Based on the agreement of the two parties, a schedule for PkM activities and implementation procedures have been mutually agreed upon. Partners provide facilities where PkM activities are carried out, presenting training participants at a mutually agreed time. The executor provides materials and tools that will be used in PkM activities.

Palm sugar processing production activities are a household industry that takes up to 8 (eight) hours to work on, so it is most appropriate for housewives to do so. Therefore it is deemed necessary to provide guidance and assistance to groups of palm sugar craftsmen to carry out appropriate technological transformations for palm sugar management. During the implementation of the PkM the Team Leader and members continue to communicate with the Leader of the Palm Sugar Craftsmen Group so that the implementation can take place as we did.

Through this activity can provide a solution for the palm sugar processing process in order to solve the problem, namely:

1. Shorten the time in cooking sap water to turn into sugar from eight hours to 2 (two) hours.
2. Changing the technology of using firewood in the process of cooking sap water using a gas stove so that it can reduce the duration of cooking sap water into palm sugar.

3. By using a gas stove in the sugar production process, the process is shortened and can save production costs.
4. The quality of the sugar produced is better than before because the heat is not constant and the thick smoke has an impact on the low quality of the sugar.
5. There is more time left for housewives to be utilized in other productive activities around them.

Figure 3 & 4. Initial Process of Palm Sugar Production Activities for the 2020 UMI PkM Program

The initial process of making palm sugar is carried out by heating Nira water which takes a few hours. If craftsmen carry out the processing using firewood, the process can take up to 8 (eight) hours and if it is done using a gas stove it only takes 2 hours. The activity in picture two is the initial process of cooking sap water using a gas stove with high quality and constant heat so that it can help craftsmen carry out the process of making sugar in a short duration. The process of making palm sugar requires a process that takes place continuously so that this activity should not stop at one stage but must be continued in the next phase, namely branding, packaging so that the results can have high quality. The process of making palm sugar must be continuously monitored during the kara-making process to produce one product variant, for example liquid sugar must be tested for the viscosity of sugar water at a level that is still runny so that it does not clump easily when packaged in a bottle and also cannot be too runny because it will affect the quality of sweetness.

Figure 5. Packaging and labeling for Liquid sugar products at the 2020 PkM activities.

The process of making liquid palm sugar only takes approximately one hour to produce liquid sugar that can be packaged as liquid sugar in a very short time, which certainly has an impact on reducing costs. By reducing production costs, farmers will receive income from higher sales profits. In addition, the price of liquid sugar is much more profitable when compared to the ordinary confectionery sugar that has been produced so far. The price of traditional printed sugar that has been sold so far is at the level of collectors and banrolls of only IDR 10,000, whereas if it produces liquid sugar it can produce one liter of the same raw material and can be sold at IDR 35,000 to 45,000 per liter. Means with liquid sugar can receive a higher selling price.

The next process is making printed sugar products which is a follow-up process after making liquid sugar. sugar The process of making printed sugar traditionally requires cooking time to produce sugar with a duration of 8 (eight) hours so it uses a large amount of firewood. Therefore, PkM can transform technology into sugar production so that it only takes 2 hours using a gas stove.

Through the application of appropriate technology and increased innovation, it is possible to produce printed sugar with a higher quality than traditional printed sugar. With this printed sugar innovation, it will produce better quality sugar compared to traditional printing because it can build an image so the price becomes more expensive, which can be sold at IDR 30,000 / kg. This will increase the acceptance of palm sugar craftsmen.

In the next production process, palm sugar (falm sugar) is made, which is a product variant that is still not widely marketed compared to the printed sugar that has been produced by farmers in general. The production process of ant sugar is a process that requires special skills in forming ant sugar when the sugar liquid has a very thick content then it is rubbed on the edge of the pan and then scraped so that it forms fine grains and then pressing the powder is carried out to produce a smooth powder evenly then sieving the sugar powder arenn so that it produces ant sugar (falm) sugar which is ready to be packaged. The price of the ant sugar variant on the market is sold per kilo gram at a price of IDR 45,000 to IDR 65,000.

By producing ant sugar, it can increase market share and relatively high prices so that the acceptance of sugar craftsmen increases. In addition, it already has several sugar variants from the Diversification of processed palm sugar products through PkM conducted by the Team from the Indonesian Muslim University Makassar.

Based on the evaluation of the PkM activities carried out especially in Borisallo Village, ParangloE District, Gowa Regency, several conclusions can be drawn as follows:

1. The PkM activity process must run continuously at a location so that it can solve the problems faced by Mitara in running and developing its business.
2. With continuous implementation so that there is no impression of jumping up and down in making PkM from one title to another but cannot measure the results of a PkM activity. Partners in the village where the activity is carried out must truly feel the benefits of the PkM output.

Economic Analysis of Community Service Activities (PkM)

This activity is intended to carry out technological transformation into the economic activities of the people in Borisallo Village, ParangloE District, Gowa Regency so that they can innovate in production techniques for home industries of micro business actors at PkM locations. In addition, with the application of appropriate technology so as to increase the added value of production in rural areas, as well as increase people's income.

Economic analysis of PkM activities in the village of Borisallo/Bontoduri by analyzing costs and revenues as follows:

Table 1. Recapitulation of costs and revenues for each variant of palm sugar

No	Sugar variant	Cost / month (Rp)	Receipt/month (Rp)	Profit/month (Rp)
1	Traditional Printing Sugar	160.000	300.000	140.000
2	Innovation printing sugar	225.114,59	1.350.000	1.124.885,41
3	Liquid sugar	225.114,59	1.350.000	1.124.885,41
4	Ant sugar	225.114,59	1.500.000	1.274.885,41

Based on the details of costs and sales results of sugar products in several variants, it can be concluded that by applying appropriate technology and innovation in variants of palm sugar products, it can be concluded that using appropriate technology and innovation can increase the acceptance of sugar business craftsmen in Borisallo Village, Parangloe District Gowa Regency. If with traditional management, sugar craftsmen can only receive a profit of 140,000 per month, whereas by applying appropriate technology and product innovation, the income can reach a month for every 5 liters of sap water per day, so if they can produce 20 liters of sap water per day with yields 4 kilos of innovative printed sugar and liquid sugar and ant sugar per day, then the sugar craftsmen will get 4 x 1,124,885.41 = 4,499,541.64. This value is much greater than the traditional method of 4 x 140,000 = 560,000 per month.

Conclusion

Based on the results of the evaluation carried out by the Community Service Team related to the activity, several things can be suggested as follows:

1. The results of the evaluation of the activities carried out in transferring appropriate technology to the community were felt to be very useful by the partners and community leaders who attended and witnessed the ongoing activities.

2. The PkM program that has been implemented in the Palm Sugar Craftsmen Group is running smoothly according to the target, although it still needs improvement in the future related to the willingness of the Team and Partners.
3. Based on experience in the field in implementing the PkM Program, it is necessary to implement it continuously (multi-year 2 years) to get good outcomes.

Based on the conclusions put forward, it can be suggested several things as follows:

1. The PkM program is deemed necessary to be carried out on an ongoing basis from time to time to produce the application of appropriate technology for the community because it is very much needed by the community.
2. For the LPMD, it is necessary to make planning that is integrated with the UMI program with PkM so that it can provide maximum benefits for the community and UMI
3. The PkM program should have considered multi-year to get outcomes that could benefit the Community, the Implementation Team and UMI

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