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EMPOWERING RED RICE FARMERS THROUGH HOLISTIC ASSISTANCE IN ARALLE, MAMASA REGENCY, TOWARDS SOCIAL AND ECONOMIC INDEPENDENCE

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Abstract

Aralle Village, located in Aralle District, Mamasa Regency, is a highland area with an altitude of between 800 and 1,200 meters above sea level. This area has a cool climate with high rainfall that is very supportive of the cultivation of food crops, especially local rice such as red rice. This commodity has a distinctive taste and high nutritional value, so it has great potential to be developed as a superior local product. Unfortunately, this potential has not been fully utilized by the community, the majority of whom still practice traditional and subsistence farming. Limited access to infrastructure, particularly road conditions and agricultural product transportation, is a barrier to comprehensive agricultural development, from upstream to downstream. According to information from farmers around Aralle, the management of farmer groups does not pay attention to institutional aspects, marketing management aspects, and production aspects related to red rice, from planting to harvesting and post-harvest.

Keywords: Brown Rice, Farmers, Aralle

INTRODUCTION

Brown rice is a local commodity with high nutritional value and economic potential. In Mamasa Regency, especially in Aralle District, brown rice plays an important role in the community's life, both as a food source and part of cultural traditions. However, this potential has not been optimally exploited because farmers face limitations in processing, marketing, and business management.

The post-harvest process is still traditional, with drying dependent on the weather, manual sorting and packaging, and marketing limited to local markets. These conditions result in inconsistent product quality, low selling prices, and difficulty penetrating modern and digital markets. On the other hand, farmer institutions and business management capacity are still weak, resulting in low bargaining power for farmers and limited access to capital and markets. The problems faced by farmers on swampy land in South Sumatra in terms of drying are a) relatively high rainfall and soil moisture, b) minimal drying facilities such as limited drying yard space, limited drying floors and drying equipment, c) lack of labor during simultaneous harvests that must be completed in a relatively short time, d) difficult transportation during the rainy season, and e) untrained local operators. All these limitations

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cause the drying process to take longer (Sutrisno & Ananto, 2000).

Through the Community Service Program (PKM), the team strives to provide holistic assistance that includes:

1. The application of appropriate technology such as drying machines, digital scales, and sealers;
2. Technical and managerial skills training;
3. Strengthening branding and packaging design; and
4. Digital marketing strategies through marketplaces and social media.

This approach is expected to improve the quality and competitiveness of Aralle brown rice and expand its market access. These PKM activities are in line with the Sustainable Development Goals (SDGs), particularly SDG 8 on decent work and economic growth, and SDG 12 on responsible consumption and production. In addition, this program supports the President's Asta Cita, which emphasizes increasing the economic independence of rural communities.

The process of making appropriate machines begins with a non-technical stage, namely surveying and identifying user needs (Dewi et al., 2023). In addition, the support stage includes training and mentoring for machine users (Hariyanto et al., 2019). Thus, the PKM program “Empowering Red Rice Farmers Through Holistic Assistance in Aralle, Mamasa Regency Towards Social and Economic Independence” is not only oriented towards increasing income, but also building the social and economic independence of farmers in a sustainable manner through technological innovation, capacity building, and market development.

Based on the above explanation, the results of the team's community service activities in the field indicate the need for more sustainable assistance, leading to a more complex and organized program that involves not only one farmer group but also more groups related to brown rice assistance in Aralle Subdistrict, Mamasa Regency, so that the assistance is more focused and the assistance program has greater capacity.

Analyzing the existing conditions of partners is a very important first step in designing a community service program (PKM) assistance strategy. This analysis provides a comprehensive picture of the initial position of red rice farmers in Aralle Subdistrict, Mamasa Regency, so that the interventions carried out can be more targeted, relevant, and sustainable. Based on the results of field surveys, in-depth interviews, and direct observations, the existing conditions of the partners can be described through several main aspects, namely production, technology, management, marketing, and human resources (HR). However, the application of appropriate technology must be supported by the role of extension workers and related institutions to facilitate the procurement of raw materials, training, and assistance for farmers (Mawardi et al., 2019; Sofia et al., 2022). Collaboration between the government, industry, and educational institutions is also needed to create a sustainable innovation ecosystem (Lase et al., 2024).

Production Aspects

In terms of production, the majority of brown rice farmers still rely on traditional methods, especially in the post-harvest drying process. The techniques used tend to be simple, such as direct drying in the sun without regard to ideal moisture standards. These conditions result in brown rice of inconsistent quality in terms of color, texture, and shelf life. In addition, the lack of consistently applied quality standards makes it difficult for products to meet modern market requirements. Inefficiencies at this stage of production have a direct impact on the low productivity and quality of the brown rice produced.

Technological Aspects

The lack of appropriate technology utilization is one of the main obstacles faced by partners. Modern tools such as rotary dryers for drying or digital scales to ensure product weight accuracy are not widely used by farmers. As a result, in addition to declining product quality, there is also uncertainty in estimating crop yields. With limited production facilities, most farmers still rely on manual methods that are time-consuming and prone to crop damage. This technological gap is one of the important focuses of PKM intervention, considering that improving product quality is highly dependent on the application of more efficient technology.

Management Aspects

Farm administration at the farmer level is still not well organized. Records of production costs, harvest quantities, and business expenses are not systematically documented. This has implications for farmers' weak ability to evaluate their businesses, prepare financial plans, and access capital institutions. The absence of simple financial reports also makes it difficult to measure the real profits obtained from brown rice farming. Thus, one of the urgent needs is to strengthen farmers' capacity in terms of farm management, including simple bookkeeping and financial management.

Marketing Aspects

In terms of marketing, the reach of Aralle farmers' red rice products is still very limited. Sales are generally made in local markets or through informal distribution networks. The packaging used is still simple, such as plastic sacks without labels, making it less attractive to urban consumers and modern markets. As a result, the added value of the product is not optimal and the selling price tends to be low. In today's digital era, limitations in online marketing strategies are also a serious obstacle. Without the ability to utilize social media, e-commerce, or other digital platforms, brown rice products find it difficult to penetrate a wider market.

Human Resources (HR) Aspects

The HR factor is also a major challenge. Farmers' knowledge of branding, promotion, and the use of digital platforms is still very limited. Most farmers only focus on production without understanding the importance of modern marketing strategies. This shows the need for intensive training and mentoring to improve digital literacy, promotional skills, and understanding of the importance of brand image. With increased HR capacity, it is hoped that farmers will be able to become not only producers but also highly competitive business actors.

Overall, the existing conditions of the partners show great untapped potential. Red rice, as a leading local commodity, has promising market opportunities, both in terms of nutritional value and the trend toward healthy food consumption. However, limitations in production, technology, management, marketing, and human resources remain major obstacles. Therefore, this PKM program aims to address these issues through a holistic approach that includes strengthening production capacity, utilizing appropriate technology, business management, digital marketing strategies, and human resource development.

This analysis forms the basis for formulating PKM intervention strategies, so that each activity designed can have a real impact on improving the social and economic independence of red rice farmers in Aralle.

IMPLEMENTATION METHOD

The method used in this Community Service (PKM) activity is Participatory Action Research (PAR). This method emphasizes the active participation of partners in every stage, from problem identification to evaluation, so that the interventions carried out are truly relevant to the real needs in the field. This approach was chosen because it is able to bridge the gap between academic knowledge and local practices, as well as encourage the independence of partners in managing the results of the assistance.

The PKM implementation process was carried out through five main stages, namely:

Preparation

The initial stage focused on identifying partner needs through field observations and focused group discussions. These activities included coordination with village officials, farmer groups, and relevant stakeholders, as well as the preparation of a mutually agreed activity schedule. At this stage, technical planning for the procurement of tools and materials to support the application of appropriate technology was also carried out.

Socialization

The socialization stage aims to provide farmers and stakeholders with an initial understanding of the objectives, benefits, and series of PKM activities. Socialization is carried out through group meetings and open presentations so that all parties involved can understand their respective roles and the long-term benefits of the program. This activity also serves as a forum for building a shared commitment to the success of the program.

Technology Implementation

This stage focuses on the handover and training in the use of appropriate technology, such as rotary dryers for drying rice, digital scales for accurate measurement, and electric sealers for product packaging. Training is conducted hands-on so that farmers are able to operate the equipment independently. The expected results are an improvement in the quality of brown rice and efficiency in the post-harvest process.

Human Resource Assistance

Assistance is provided through thematic workshops covering farm management, modern packaging, product branding, and digital marketing. In this stage, farmers not only receive materials but are also involved in practical simulations, such as creating online store accounts, designing packaging labels, and devising promotional strategies on social media. This participatory approach ensures that knowledge and skills can be applied in daily business.

Monitoring and Evaluation

The final stage consists of monitoring and evaluation to assess the effectiveness of activities, identify obstacles in the field, and formulate recommendations for sustainability. The evaluation is conducted through observation, brief interviews, and feedback collection from partners. In addition, indicators of success include improved product quality, human resource skills, and the establishment of a better marketing system.

RESULTS AND DISCUSSION

The implementation of the Community Service Program (PKM) focused on empowering red rice farmers in Aralle Subdistrict, Mamasa Regency, has been running according to the activity plan that was formulated from the initial stage. This activity not only introduces technology and innovation, but is also designed to build active community participation, strengthen local institutional capacity, and foster collective awareness of the importance of modernization in the agricultural sector.

The implementation process took place over several months, using a participatory action research approach, in which partners (red rice farmers) were directly involved in every stage from planning and training to evaluation. This is important to ensure that the interventions are not only temporary but can be sustained after the program ends.

Broadly speaking, the results of the implementation can be categorized into several main aspects: production, packaging, marketing, human resource strengthening, and resolution of problems faced by partners.

Figure 1. Interviewing red rice farmers and local government officials (Aralle subdistrict, Mamasa district, West Sulawesi province)

Production

Before the intervention, the red rice processing method was very simple and traditional. Farmers relied on sun drying as the main method for drying grain. This method had been passed down from generation to generation, but it had several disadvantages, including:

1. Dependence on weather: During the rainy season, the drying process was often hampered, causing the harvest to pile up and potentially spoil.
2. Inconsistent quality: Manual drying results in uneven moisture content in the grain, with some parts being too dry and others still damp.
3. Risk of contamination: The open drying process is susceptible to dust, dirt, and pests such as chickens and insects.

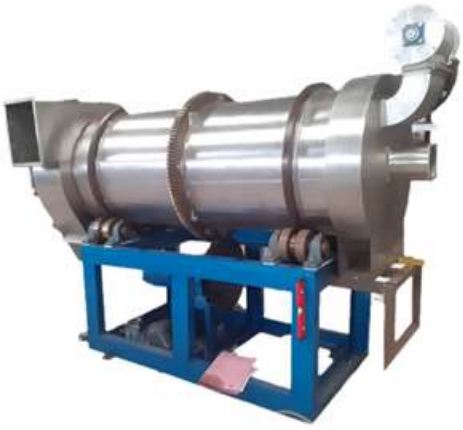

Figure 2. Rotary dryer

Through this program, farmers were introduced to rotary dryer technology with a capacity of 30 kg/hour. This machine is capable of drying grain more quickly, hygienically, and uniformly. The implementation stages were as follows:

1. Technical training: Farmers were trained on how to operate, regulate the temperature, and maintain the machine.
2. Field simulation: The machine is operated directly on the latest harvest to ensure farmers' practical understanding.
3. Knowledge transfer: A simple manual in the local language is created to facilitate operation.

The results obtained are quite significant. Brown rice products show a stable moisture content in the range of 14%, in accordance with modern rice storage standards. With consistent moisture content, the product is more durable, less prone to mold, and meets the requirements for entry into the modern retail market.

In addition to improving quality, the use of rotary dryers also provides time efficiency. Previously, the drying process took 2-3 full days, but now it can be done in just a matter of hours. This helps farmers reduce labor costs and the risk of losses due to crops damaged by bad weather.

Packaging Aspects

According to Riyanto & Kartini (2021), packaging is a field of visual communication design that has many specific requirements because its function is directly related to consumers, including technical, creative, communicative, and marketing requirements, which must be realized in visual language.

Packaging is a process related to design and production with the main objective of maintaining product quality (Kotler & Armstrong, 2012);(Swastha and Irawan, 2005). Packaging is one of the important factors that determine product competitiveness. Before the PKM program, Aralle's brown rice was only packaged in plain plastic bags weighing 5–10 kg. The packaging had no brand identity, was impractical for household consumers, and was difficult to compete with similar products already on the modern market.

Figure 3. Brown rice strengthening program for farmers and markets

The intervention was carried out by designing metalized standing pouches with zippers in 1 kg and 2 kg capacities. In addition, the team also helped design a brand label with the name “Aralle Merah Organik” (Organic Red Aralle) that displays complete information: product logo, village of origin, nutritional content, and producer contact number.

The advantages of the new packaging include:

1. More hygienic because it protects the rice from air and moisture.
2. More practical for consumers because it is easy to store and use.
3. Provides a premium image, so the product has a higher selling value.

The results of sales trials in local markets showed a positive response. Consumers found the new packaging more attractive, easy to carry, and suitable for daily needs. In fact, several grocery stores in Mamuju have become interested in selling this product because its appearance is on par with products from large companies.

This new packaging is an important milestone because it indirectly encourages a change in the mindset of farmers: from simply selling rice as a raw commodity to becoming producers with a modern market orientation.

Marketing

Marketing is the biggest challenge for farmers in Aralle. Until now, their market access has been limited to local buyers or middlemen who come directly to the village. As a result, the selling price of products is often suppressed, and farmers do not have strong bargaining power.

To address this issue, the PKM program presents a digital marketing strategy. The steps taken include:

1. Creating online store accounts on popular marketplaces.
2. Social media training for promotion, with a focus on Instagram and Facebook.
3. Digital branding assistance, including product photography techniques, writing attractive descriptions, and interacting with consumers.

As a result, within three months, partners successfully made their first transactions through the marketplace. Although sales are still limited, this proves that even products from remote villages can penetrate the national market with the right strategy.

In addition, several orders also came from consumers outside the region, especially Mamasa alumni who now live in big cities and are interested in buying local products through digital channels. This shows the domino effect of marketing digitalization: expanding market reach while building pride in local products.

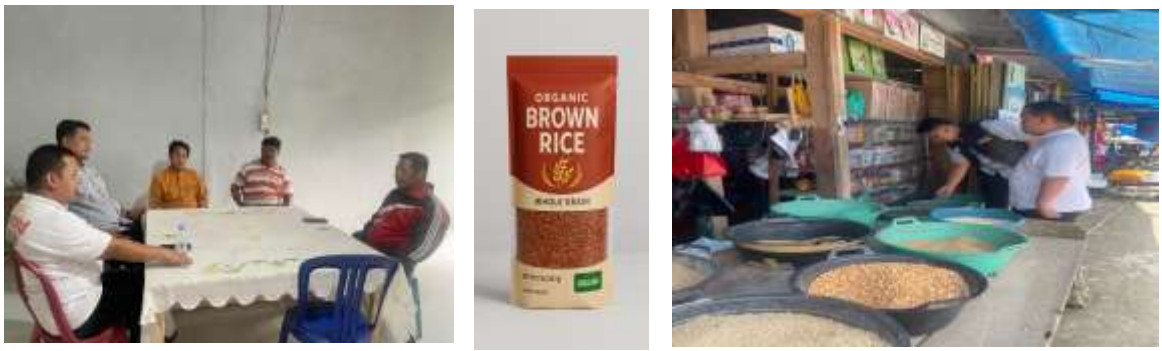

Figure 4. Human Resource Training and Red Rice Marketing by the Aralle Farmer Group

Human Resource Strengthening

Human resources are a key aspect of program sustainability. Without improving human resource capacity, technology and marketing strategies will not run optimally. Therefore, PKM activities focus on practical skills-based assistance.

The training materials provided include:

1. Branding and brand management: The importance of building product identity, maintaining quality consistency, and promoting the unique value of organic brown rice.
2. Simple financial record keeping: Farmers are trained to keep daily records of production costs, sales, and profits. This is important to prevent cash flow confusion and support the transparency of the group's business.
3. Digital promotion: Farmers are taught how to create promotional content using mobile phones, from photographing products and making short videos to writing interesting

captions.

4. Farm business management: Discussions on harvest planning, division of tasks within the group, and quality control strategies.

This training resulted in a significant change in mindset. Farmers began to realize that they were not just producers, but also entrepreneurs. This awareness became an important foundation for building economic independence.

CONCLUSION

Based on the results of the red rice farmer empowerment program through holistic assistance in Aralle, Mamasa Regency, this training activity has led to social and economic independence. With the use of rotary dryers, the red rice produced is more uniform, hygienic, and meets market standards. Consumers who were previously hesitant due to inconsistent quality are now more confident to make repeat purchases. This opens up opportunities for farmers to reach a wider market, including modern stores and urban consumers. Before the program, sales were limited to local markets and middlemen. Now, with online stores and social media, farmers are starting to get transactions from outside the region. Although sales volume is still limited, this success proves the great potential that can be developed with a sustainable promotion strategy. The combination of hard and soft technology makes farmers more independent. They no longer rely entirely on middlemen to market their products. With new skills in branding and marketing, farmers are able to set fairer and more profitable selling prices. This program also encourages a paradigm shift. Whereas previously farmers considered technology to be the preserve of large companies, they now realize that innovation can be accessed and utilized directly. This collective awareness is an important social capital for the sustainability of the program.

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